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This Issue is dedicated to Winifred Hathaway

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WINIFRED HATHAWAY

"The Lady with the Lamp"



Winifred Hathaway

TO Winifred Hathaway this number of *THE SIGHT-SAVING REVIEW* is dedicated. In paying her tribute we can do no better than to say that her actions speak more eloquently than our words. But we can draw upon those who have at least attained a degree of eloquence that may approximate the degree of esteem in which she is held by all who know her.

The late Dr. Park Lewis, a man of whom Mrs. Hathaway speaks with great respect and admiration, said of her, in presenting her with the Leslie Dana Gold Medal in 1937:

"Mrs. Hathaway's influence in modern education has extended beyond the borders of the United States. . . . The tale is but half told when we say that she has doubtless brought the story of the need and the methods of safeguarding sight to a larger number of persons than any man or woman in the United States.

"Because of the things that she has done, because of her selflessness, of her thoughtfulness, her self-abnegation, the altruism that has characterized her every daily act, we have summoned this woman, Winifred Hathaway, that we may do her honor in the presence of her collaborators, the ophthalmologists of America.

"And now by virtue of the authority vested in me by the vast multitude of those to whom she has brought light, I hereby proclaim that Winifred Hathaway shall no longer be designated as ordinary women are, but that she shall be known as Lady Winifred, the Beneficent, the Light-Bearer, and in token thereof we have caused to be graven on a disc of minted gold her new name: 'The Lady with the Lamp.'"

If medals were given as frequently as they are earned, Mrs. Hathaway would be covered with them, and no year would pass without some well-deserved award. Her most recent public recognition was signalized just a few months ago by the bestowal of the Ambrose M. Shotwell Gold Medal from the American Association of Workers for the Blind. The hand-illuminated award accompanying the medal stated:

"Acutely sensitive to the precious value of sight and ever mindful that its conservation is one of the noblest works of all time, we, the

American Association of Workers for the Blind, salute you as a GREAT TEACHER and as one who works constantly and courageously to make our load lighter.

"Knowing so well the worth of your work and appreciating so keenly your many years of complete devotion to it, we do now, in faithful and affectionate tribute to your vast contribution, herewith present you the Ambrose M. Shotwell Award at Salt Lake City, Utah, on this twelfth day of July, 1950."

No tribute to Mrs. Hathaway would be complete without including some expression of the devotion of her colleagues. The following excerpts are from letters sent to her upon her retirement. They were obtained without her knowledge since we knew her modesty would not have permitted publication of such personal tributes.

HELEN KELLER
Westport, Conn.

"Fervently we thank you for your constant devotion to the saving of human eyesight."

KATHARINE F. LENROOT, *Chief*
Children's Bureau, Washington, D. C.

"May I tell you how greatly I appreciate all that you have done through the years in behalf of this cause and how much I have enjoyed my association with you."

ELISE H. MARTENS, *Chief*
Exceptional Children and Youth
Office of Education, Washington, D. C.

"The education of children with partial vision owes to you a debt that can never be paid. Out of the wealth of your wisdom and experience, you have laid for it a firm foundation and you have been foremost in building year by year a solid structure of achievement."

P. BAILLIART, *President*
International Association for Prevention of Blindness
Paris, France

"Your work has been fruitful; your help to our cause cannot be overestimated and you have relieved innumerable sufferings. For all of us you will remain the model to look up to."

JULIANA, *Queen of the Netherlands*
Amsterdam, Holland

"As I know how much you did in behalf of the partially sighted children and how very kind you were to show Mrs. Lambert in which way you educate them in America, I wish to send you my best thanks and very best wishes for pleasant peaceful days ahead."

K. C. LAMBERT
Rotterdam, Holland

"The message of your approaching retirement brought again into my mind the importance of each person, who was a pioneer in a certain branch of human activity. It has been your privilege to work as such in the field of the prevention of blindness. It has been my privilege to meet you and to profit by your great knowledge and experience. This has been made possible however in this way by your charming personality and your friendly way of meeting other persons."

STEWART DUKE-ELDER
London, England

"Those who claim your friendship and who are deeply in your debt in the United States are many; but perhaps you do not realize how many people outside the borders of your own country have watched with admiration all you have done for the blind and have received help and inspiration from what has been a unique life work. I personally would thank you for what you have done for me and I hope that in your leisure you will find all the happiness that you have richly earned."

B. ETHEL YOUNG
The Holland School
London, England

"For over 20 years now I have been able to count upon your loving understanding of every problem connected with the work for Partially Sighted Children, far away though you have been. . . .

"During all these years I have spoken about you to people from almost every country in the world, and have seen the results of your work in France, Belgium, Holland, Switzerland and Germany.

"Two years ago I saw classes working on your lines in Paris side by side with those working on mine, and since then your book has

made no less than 9 journeys abroad to help spread the idea of help for the partially sighted child.

"Many a partially sighted person must bless your work even though he may never have heard your name."

E. A. BAKER, *Managing Director*
Canadian National Institute for the Blind
Toronto, Ontario, Canada

"We are grateful to you for the invaluable assistance which you rendered us in our pioneering efforts in the prevention field in Canada. You, personally, have been an inspiration to all Canadians who have been privileged to know you. . . . Certainly many thousands whose vision has been preserved or conserved owe you the fullest debt of gratitude."

GRACE C. HAMMAN, HENRY A. NYE, FORREST J. PINKERTON, M.D.,
DORA C. ZANE
Territory of Hawaii
Honolulu, Hawaii

"We, in the name of the thousands of residents of the Territory who have been benefited by your devotion to this Service, extend our congratulations for a remarkable and successful thirty-three years of service in Prevention of Blindness and our fondest best wishes and Aloha for many happy years of leisure."

WILLIAM M. CRUICKSHANK, *Director, Special Education*
Syracuse University
Syracuse, N. Y.

"Your work has been recognized by leaders of this and other countries as being outstanding. Your untiring efforts to spread the program of sight conservation courses in cities of the United States and to establish teacher training programs in the universities and colleges has been inspiring and is deeply appreciated by all those who have had the privilege of knowing and working with you."

GABRIEL FARRELL, *Director*
Perkins Institution
Watertown, Mass.

"In our special field we have often sought your mature, sound judgment in meeting the problems and needs of our partially sighted boys and girls. Your book will continue to help us in meet-

ing these problems and will undoubtedly hold its authoritative position in our literature for many years to come."

JOHN J. LEE, *Dean*
Wayne University
Detroit 1, Mich.

"In the development of teacher education in sight-saving here at Wayne you served as a consultant in the development of our curriculum; you taught our professional courses and, in fact, trained our staff here at Wayne. Then when I note that you have given these services always so graciously and so generously in states throughout the Union and in universities and colleges over the country, I often wonder how one person could have accomplished so much and so well."

R. L. EYMAN, *Dean, School of Education*
Florida State University
Tallahassee, Fla.

"When the time came for this University to set up its program of training in Sight-Saving Education, we naturally turned to you for advice. When this advice came to us it was specific and to the point. You always seemed to have enough time to go into sufficient detail and to make every point clear to us. If at any time we disagreed with you, you were always patient and far seeing and finally led us out of the wilderness and into the Promised Land."

FLORENCE V. ESSERY, *Associate Professor of Education*
University of Tennessee
Knoxville, Tenn.

"You will never retire. For me, as for many others, you will continue as you began—a symbol of helpfulness, the resource we were eagerly searching. First, the bulletins; then the book which we seized upon with delight. Its comprehensiveness was answering our many questions in getting started and developing a program for Tennessee."

FRANK J. O'BRIEN, M.D., *Associate Superintendent*
Board of Education
110 Livingston Street, Brooklyn 2, N. Y.

"The standards and ideals you have established, the numerous contacts you have made and the inspiration you have instilled in

teachers, educators and doctors all over the world should prove a source of great joy and satisfaction to you in completing so great a service to humanity. You can be assured that the work you have done so well will be carried on."

A few words from other friends and former students give further testimony of Mrs. Hathaway's wide influence and popularity.

"My happiest years of teaching have been with the visually handicapped and I feel the contributing factors to such enjoyment have been the unusually thorough course you gave at Columbia University and your guidance and inspiration since I have been in sight-saving work."

*

"For all your patient guidance, unselfish and untiring efforts I wish to thank you; you rounded out my teaching experience making me feel I had not laboured in vain, for the joy in saving sight gives real meaning to one's work."

*

"All of us who know you as teacher, consultant, and guide, have known a leader who is creative, selfless, and untiring. You have filled us with zeal for the work; more than that, you have given us a shining example of friendship. The qualities that have made your leadership fine have made your friendship a privilege. Our gratitude for what you have done will strengthen our determination to carry on the work you have inspired us to do."

*

"We gather the gratitude of the countless pupils whose sight we have preserved and weave it into a garland of love for Winifred Hathaway, who through her devotion planted imperishable beauty in so many lives where darkness and despair may otherwise have grown."

Meeting the Needs of Visually Handicapped Preschool Children

Berthold Lowenfeld, Ph.D., Superintendent

California School for the Blind, Berkeley, California

EMPHASIZES the need for medical and psychological research in problems of the visually handicapped preschool child, and points out the responsibilities of parents, physicians, teachers and nurses in meeting these problems.

IN 1930, the White House Conference on Child Health and Protection estimated the number of severely visually handicapped preschool children in the United States as 798, and this was considered by many a conservative figure. At that time all those concerned with providing education for blind children felt a justifiable hope that the number of children either born blind or becoming blind early in life would still further decrease in the future. Twenty years later the situation has reversed itself completely. All organizations concerned in any way with case finding of such children report a shocking increase.

Blindness in Preschool Children

The Connecticut State Board of Education for the Blind, for instance, reported in February, 1950,¹ that it has "case records of 98 blind children not more than six years of age, 68 of whom are blind from retrolental fibro-

plasia." The New York State Commission reports that in August, 1950,² there were in the State of New York, where reporting of blindness has been mandatory since 1945, 492 blind preschool children of whom 175 are diagnosed as retrolental fibroplasia cases. The New Jersey State Commission³ had 123 blind preschool children registered on July 1, 1950, of whom 51 have retrolental fibroplasia. California, which has had organized services for its blind preschool children only since a year ago, has found so far 121, of whom 59 are diagnosed as retrolental fibroplasia.

Factors Indicating an Increase

Actual figures on the increase of severe visual handicaps in young children cannot be given because no statistics are available for the preretrolental period. Comparison of figures for 1947⁴ with those for 1950 show an increase of 28 per cent for New Jersey

(96 children in 1947 against 123 in 1950) and a more than four times larger number of blind preschool children known to the New York State Commission (115 in 1947 against 492 in 1950). Any analysis of these figures would have to take into consideration not only the fact of a genuine increase in the number of blind preschool children but also the effect of such factors as mandatory reporting, availability of services, and improved case finding.

Two reasons will be given here as evidence that there is a genuine increase in the number of blind preschool children. Retrolental fibroplasia was first brought to public attention in 1942.⁵ The above-reported data for 1950 reveal that from 36 to 69 per cent of the blind preschool children reported in New York, New Jersey, California and Connecticut, are blind from retrolental fibroplasia. Ten years ago this disease entity was a practically unknown cause of blindness. In 1950 it is the largest known single cause of blindness in preschool children. A comparison of age groups within a residential school also supports the assumption of a real increase in the number of young blind children. Table I shows, for the California School for the Blind, that the middle age group, from eleven to fifteen years, remained constant at 44 per cent during the period from

1944 to 1950; the group of older children, from sixteen to twenty years of age, decreased from 30 to 19 per cent; and the group, from five and a half to ten years of age, increased from 26 to 37 per cent. While in 1944 the group of younger children was somewhat smaller than the group of older children, in 1950 it is twice as numerous.

Need for Research

An article concerned with the needs of preschool children with severe visual handicaps must, therefore, state as the greatest need that of *preventing blindness*, particularly retrolental fibroplasia which is the number one medical problem in this area.

Medical Research

Medical research on the prevention of this condition should find widest financial support, public and private. Its success could reduce the number of blind preschool children by about one third to two thirds. Those in charge of allocating money for research should think of this not only in terms of saving sight but also of averting unhappiness and potential adjustment difficulties, social and economic.

Psychological Research

All parents of blind children want to know an answer to the question, "Will

TABLE I: CHANGES OF NUMBER OF PUPILS IN THREE AGE GROUPS AT THE CALIFORNIA SCHOOL FOR THE BLIND FROM 1944 TO 1950

Age Group	1944-1945	1947-1948	1950-1951
5½-10.....	41 (26%)	53 (34%)	62 (37%)
11-15.....	69 (44%)	67 (43%)	72 (44%)
16-20.....	47 (30%)	36 (23%)	31 (19%)
	157 (100%)	156 (100%)	165 (100%)

my child be a *normal* blind child?" Parents of prematurely born blind children and of others like those who are blind as a result of German measles in the mother during the first two months of pregnancy are particularly anxious concerning the mental ability of their children. Research on the development of young children in general has resulted in a large body of knowledge which permits assessment and testing with a considerable degree of confidence in its results. A far better understanding of the development of blind children, and of its stages and rate, is needed in order to provide equally reliable answers to the parents of blind children. Thus, psychological research is the second field in which results are sorely needed. Such research will not only answer parents' questions but also help to base the children's training, in all its ramifications, on scientifically sound grounds.

Parental Attitudes

When people find themselves parents of a blind or a partially seeing child they are unprepared emotionally and pedagogically to meet this situation. They, like parents of other handicapped children, experience of necessity feelings of disappointment, resentment, frustration, and anxiety. They must adjust their emotions and their thinking to the fact that their child does not meet with their expectations. Besides this general reaction pattern toward a handicapped offspring, the parents of visually handicapped children react to this specific impairment on the basis of ideas of blindness which are widespread among the public, that the blind are incapacitated and helpless, that they lead unhappy and tragic

lives, and that blindness is the greatest misfortune next to loss of life itself. In addition, parents will experience more or less intense feelings of guilt, particularly if they find reasons to blame themselves for the child's handicap, regardless of the objective truth of such self-accusations. Religious influences and naive concepts of justice, as well as superstitions, explain afflictions as retribution for the sins committed by parents and ancestors. Many parents thus feel that the visual limitation in their child is a punishment imposed upon them, and are ashamed of their offspring.

It must therefore be expected that these negative attitudes on the one hand and the natural devotion which most parents feel toward their child on the other hand will result either in ambivalent reaction forms or in conflicts of a serious nature. Chances are that parents who are themselves secure, content with their place in society, and happy in their marital relationship will accept the child and develop a warm and satisfying parent-child relationship. They will do their best to understand their child's needs and to provide him with opportunities and experiences for a normal development. Parents who themselves are "conflict ridden" will be driven by their emotions into rejective attitudes manifested either by neglect or overprotection of their child. Needless to say that negative reactions of the parents are often disguised because the parents may not be able or willing to face their own difficulties and also because they fear society's disapproval of their reaction. Rejection, disguised or overt, will deprive the child of the subjective as well as objective prerequisites for normal development.⁶

Some Basic Needs

Most parents, therefore, need assistance in developing an attitude of acceptance toward their child and his handicap before they can make use of advice on his training. Such training must be based on the fact that his needs are basically the same as those of children with normal vision. Without attempting to present a comprehensive list of such needs an attempt will be made to mention those which seem to be most important. The visually handicapped child needs *love* and *affection*, and a *secure place* in the family, from his first days on. The importance of a close mother-child relationship during the first year of life has been sufficiently demonstrated to prove the need for early parent adjustment.⁷ The child needs *domestication* when he is ready for it, not too early, not too late, and not too vigorous. This extends into the area of feeding and weaning, toilet-training and cleanliness, and into others where habit-forming is essential.^{8, 9, 10} The visual handicap may require changes in methods, but the training problems as such are essentially the same as for seeing children. He needs opportunities for *moving* and *exploring*. His area of activity grows from his crib to his play-pen, his room, his home, his yard, and the narrower and wider neighborhood, according to his growing capacity for movement, exploration, and new experiences on his sensory level. The partially seeing child needs opportunities for *playing* and needs playthings which are adequate for his age as well as for his handicap. He needs opportunities for *taking part* in the family life, in relations with other children according to his readiness, and in nursery and kindergarten experiences.

He should be encouraged in *experiencing concretely*—not only verbally—objects and situations in his environment. The senses of touch and hearing need continuous application and practice.¹¹ The opportunity to *grow at his own rate* without over- or under-stimulation, and uninfluenced by parent anxieties, is a right of the handicapped child which is often recognized but difficult to secure. Handicapped children should be allowed to *get dirty* by playing with wet sand and also by *finger feeding*; *noise making* should be tolerated and expressions of hostility understood. Occasional *temper tantrums* are normal as reactions to unavoidable domestication efforts and to denials of pleasures. They become serious only when persistent and frequent, as a result of inadequate handling. The blind as well as the partially seeing child has a right to be treated with *patience*, particularly during such transitions as weaning and changing from liquid to solid food. He cannot learn on the basis of imitating what he sees and his acquisition of certain skills will tax his parents' patience and ingenuity. Lastly, he needs opportunities for *self-expression* in play and projective play situations, and through such media as plasteline and clay, songs and dances, rhythm and noise makers, self-found and supplied.¹² Those children who have sufficient sight need chalk and crayons and smooth paper, colored crayons, and finger paints.¹³

Available Services

Blind Preschool Child

In which ways can the parents be helped, emotionally and pedagogically? As yet there is little if anything in the way of available services for parents of

partially seeing preschool children. The service which is generally regarded as most effective for *blind* preschool children is provided by the visiting teachers.¹⁴ They help parents develop a better understanding of their own problem in accepting their child; give parents information and advice on all aspects related to the rearing and training of the child; and guide them regarding medical treatment and restoration of sight, financial assistance, regular nursery and kindergarten placement, as well as refer them to other educational facilities and provisions of public and private agencies.¹⁵ In the area of the blind also, group work with parents has been arranged in the form of institutes or meetings where parents of handicapped children are given the opportunity to consult with educational and medical experts.

Some organizations arrange meetings of parents and also parent classes. Of course informal contacts between parents in one locality are stimulated by the visiting teacher if she considers them desirable. Although children with severe visual handicaps should remain within their families and everything should be done to make the family situation as advantageous for them as possible, there are situations when removal to a foster home or a residential nursery is indicated as a last resort.

Partially Seeing Preschool Child

It would seem that the development of similar services for parents of partially seeing preschool children would be of incalculable value. Of course visiting teachers for the partially seeing preschool child would have to be adequately prepared psychologically and pedagogically to understand the visual

capacities as well as limitations of such children. The difficulty in determining accurately the amount of vision present in visually handicapped children during their preschool years perhaps accounts for the fact that the need for special services for them has been more or less overlooked. It must be recognized that in classifying children as blind or partially seeing at the early age level, no line of separation can be fixed like the 20/200 or 20/70 visual classifications for older children. It has been found feasible, however, to test the visual acuity of preschool children as young as three years old by using the Snellen Symbol E chart.¹⁶ It is logical to suppose also that the visiting teachers as well as parents or nurses can learn to recognize evidences of visual limitations in children which should be taken into consideration in planning their training and activities.

Many children who are now receiving services as "*blind*" children may later on attend classes for partially seeing children and even regular classes. Whether they do or not, a sound foundation laid during their preschool years will be the strongest determinant for their future, and the value of recognizing the visually handicapped child and providing for his needs as early as possible cannot be overemphasized.

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Age Factor in the Treatment of Amblyopia Ex Anopsia^{*}

Clement C. Clarke, M.D.

New Haven, Conn.

EMPHASIZES need for treating loss of vision due to disuse, in children with crossed eyes, before the age of four.

THE age factor in the treatment of amblyopia ex anopsia has been commented upon by many authors, mainly to confirm Claud Worth's statement¹ made in 1901 that orthoptic treatment after the age of 6 years was so difficult as to be nearly impossible. My thesis is that amblyopia ex anopsia is a preventable form of blindness but that treatment of amblyopia, to be successful, should be started before the age of four years. In lowering the age limit I am following the modern trend whereby the patients given the most consideration are getting older and older or younger and younger. Geriatrics and neonatal pediatrics are demanding more attention these days as the horizons of diagnosis and treatment broaden. As more work is done in the development and growth of the very young, it is to be hoped that the problems connected with amblyopia ex anopsia and strabismus will be clarified.

^{*} Presented at the Joint Conference of the Pan American Association of Ophthalmology and the National Society for the Prevention of Blindness, March, 1950.

Within the scope of this paper, amblyopia ex anopsia is defined as poor central vision existing without any pathological basis. I recognize that mental functions and dominance, errors of refraction including astigmatism and anisometropia, as well as ocular muscle anomalies, all play an important rôle in the production of amblyopia ex anopsia. Whatever the underlying basis, I believe that amblyopia ex anopsia, as defined, is amenable to treatment within the age limits outlined in this paper.

The importance of amblyopia ex anopsia is tremendous, just on the basis of its frequency. Using figures from a survey² by the National Society for the Prevention of Blindness, strabismus occurs in approximately 1.5 per cent of school children, or one squint in every 66 children. If 47 per cent of the cases with strabismus have amblyopia ex anopsia, as was found in a survey³ of 410 cases at New Haven Dispensary, then one out of every 143 children has amblyopia ex anopsia as well as squint. That is a lot of children

to be allowed to grow up with a blind eye. The word "blind" is used in the sense of industrial blindness which is regarded as less than 20/100 vision in most compensation courts.

Criteria for Visual Acuity

The criteria upon which visual acuity is based must also be defined. The age and mentality of the patient, the experience of the recorder, and the testing facilities available create some variation in the accuracy of the recorded visual acuity. In the very young where visual acuity cannot be obtained on any of the usual charts, an

Vision II represents "moderate amblyopia": those who tolerate occlusion fairly well, who can get along adequately in play and school using the amblyopic eye, who can fix with the amblyopic eye as long as the good eye is obscured. However, in this group fixation is still preferred by the good eye. This group is regarded as having vision ranging from 20/30 to 20/100.

Vision III represents "normal acuity": those who can hold fixation firmly with either eye, who can alternate spontaneously, or who can be made to alternate by very short periods of occlusion. This group is considered to

TABLE 1.—VISION GROUPS

	<i>Snellen Notation</i>	<i>Fixation</i>
Vision I...	Less than 20/100	Fixes with one eye only
Vision II...	Between 20/30 and 20/100	Prefers one eye. Holds momentarily with other eye
Vision III..	20/30 or better	Fixes well with either eye

estimate of the acuity is based on the visual behavior of the child. Visual acuity has been graded into three groups based on the behavior pattern and correlated with the Snellen notation (see Table 1).

Vision I represents "profound amblyopia": (a) those who tolerate occlusion with difficulty, who continually struggle to "peek," who have some difficulty in holding fixation even when the good eye is covered; and (b) those in whom fixation can be held only with the good eye when both eyes are uncovered. This latter group represents an acuity of less than 20/100.

have essentially equal vision in both eyes with a Snellen record of 20/30 or better.

Age at Testing

In order to get some idea of the age at which Snellen notations could be adequately obtained from a child, a few cases were analyzed (see Table 2). The so-called E chart was used for this purpose. Of 23 children seen during their third year but who were still less than four years old, vision was obtained on seven and not obtained on 16. Of 13 children seen during their fourth year but who were still under five, vision was obtained on 12 and not

obtained on one. Of eight children seen for the first time between the ages of four and seven years, all had a visual acuity obtained on their first visit. I have never obtained a vision recording on a child under three years. There might be more variation in a larger series, but I think that the conclusion can be drawn legitimately that most normal children of four can read the E chart, that practically no child can do so before the age of three, and about one third of those in their third year can read the E chart.

clusion must be a constant and complete covering of the good eye 24 hours a day, seven days a week, as long as is necessary to transfer the fixation from the good eye to the amblyopic eye. In later stages less severe measures are necessary to force the use of the amblyopic eye, and atropine and/or a paper patch on the spectacle lens have been employed. The effectiveness of the treatment has varied somewhat from the earlier days of the clinic. The difference in the results is based on strict adherence to the treat-

TABLE 2.—AGE OF FIRST VISUAL ACUITY

<i>Age Seen</i>	<i>No. Pts.</i>	<i>Vision Obtained</i>	<i>Not Obtained</i>
During third year, but less than four years of age..	23	7	16
During fourth year, but less than five years of age	13	12	1
First between the fourth and seventh year.....	8	8	0

Treatment

The cases used were selected from the strabismus clinic at the Grace-New Haven Community Hospital. All cases had strabismus, were under ten years old when first seen for their eye condition, and all had amblyopia ex anopsia.

The treatment for amblyopia ex anopsia has varied somewhat from time to time, but essentially has been one of obscuring or occluding the better eye to the point where the poorer eye will be used. In severe cases the only method that will accomplish this is complete bandaging of the better eye. In all such cases oc-

clusion must be a constant and complete covering of the good eye 24 hours a day, seven days a week, as long as is necessary to transfer the fixation from the good eye to the amblyopic eye. In later stages less severe measures are necessary to force the use of the amblyopic eye, and atropine and/or a paper patch on the spectacle lens have been employed. The effectiveness of the treatment has varied somewhat from the earlier days of the clinic. The difference in the results is based on strict adherence to the treat-

Results of Treatment

In studying the results of this occlusion treatment in 208 cases of amblyopia ex anopsia, the age at which the patient was first seen has been correlated with the amount of improvement (see Table 3). The cases have been divided into the following four age groups: (1) those first seen when less than two years old; (2) those seen

between two and four; (3) those between four and seven, and (4) those between seven and ten years of age.

The gradations in visual improvement are three: (1) cases showing marked improvement, i.e., going from Vision I to Vision III (from less than 20/100 to 20/30 or better); (2) those improving only one group (going from Vision I to II, or from Vision II to III); and (3) the failures. Included in the failure group are all cases who did not improve, even those who did not even try occlusion. (I have included

percentage of improvement is still high, 59 per cent. In the four-to-seven-year group the number of improvements in the *A* group has dropped sharply, while the *B* group is still about the same. However, the percentage of failures has risen to 63 per cent. In the seven-to-ten-year group the percentage of failures rises to almost 90 per cent. There is a steady decline in the percentage of improved cases as we approach the tenth birthday, with a corresponding increase in the failures. The graph shows the rapid and regular

TABLE 3

AGE GROUP	0-2 years		2-4 years		4-7 years		7-10 years	
	No. Pts.	Per Cent	No. Pts.	Per Cent	No. Pts.	Per Cent	No. Pts.	Per Cent
Group A (Marked Improvement)	13	54	25	46	4	5	0	0
Group B (Improved)	6	25	7	13	23	32	7	12
Group X (No Improvement)	5	21	22	41	46	63	50	88
TOTALS	24	100	54	100	73	100	57	100

in the table both the number and the percentage of cases.)

In the group under two years 79 per cent showed improvement. The 54 per cent showing a transfer of fixation from one eye to the other are considered to be in the markedly improved *A* group, while 25 per cent showing improved fixation but not a transfer are classed as *B*. Many of these cases are still under treatment. Failures amounted to 21 per cent in this age group, the usual reason being that the patient did not return for follow-up. In the two-to-four-year group the per-

centage of improvement is still high, 59 per cent. In the four-to-seven-year group the number of improvements in the *A* group has dropped sharply, while the *B* group is still about the same. However, the percentage of failures has risen to 63 per cent. In the seven-to-ten-year group the percentage of failures rises to almost 90 per cent. There is a steady decline in the percentage of improved cases as we approach the tenth birthday, with a corresponding increase in the failures. The graph shows the rapid and regular

Some Complications

There are certain dangers or complications in using occlusion on the very young. One possibility is the conversion of a small and unnoticed strabismus into a grossly apparent squint. The mention of this possibility to the parents will forestall medicolegal problems.

Not only can fixation be transferred from the good eye to the poor eye, but sometimes the reverse can happen—the amblyopia can be transferred permanently to the originally good eye. This unfortunate occurrence is likely to happen when the follow-up of the patient has been inadequate. After occlusion treatment has transferred the fixation, fixation is not changed from one eye to the other so as to allow equal development of vision in both eyes. Once good acuity is established it must be maintained until it becomes stabilized. Since in the early ages it is only by fixation that the acuity can be determined, it is extremely important that the patient be kept under adequate control with observations being made frequently enough so that one eye does not go for long without being used.

Maintaining Equal Vision

Equal vision is maintained by establishing either fusion or alternation of fixation, the alternation being either spontaneous or induced. Such alternation must be induced by alternate occlusion until the eyes have reached a point of maturity where the vision is stabilized. I do not know what this age of maturity in visual development is, but I think it's around ten years. The history of a girl now 16 years old illustrates some of the points:

The patient was first noticed to have an esotropia and an amblyopia at about the age of two and one half. From a profound amblyopia in one eye, she transferred fixation in approximately 2 months. Orthoptics, occlusion, and surgery obtained an excellent result during her third year. Equal vision (20/20) and second degree fusion were present until her seventh year when the vision in the left eye was noted to have dropped to 20/50. Atropine and a paper patch used intermittently over a two-year period restored the visual acuity to 20/20. No treatment has been needed since the age of 9 years to maintain good vision. Her last vision at the age of 16 years was 20/20 in each eye.

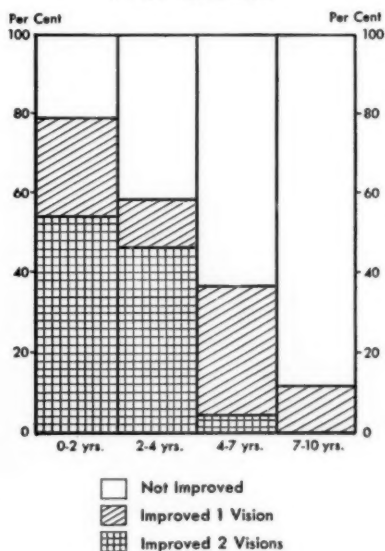
This case shows the ease and speed of amblyopia treatment when instituted early. It illustrates the need to guard against the dropping off of the visual acuity after equal vision has been obtained; and also the fact that the lowered vision can be restored even years later if the vision had been good long enough to be firmly established.

Summary

The treatment by occlusion of 208 cases of amblyopia ex anopsia has been analyzed according to the improvement shown by 4 age groups, in relation to three visual grades.

IMPROVEMENT IN 208 CASES

(In Four Age Groups)



The percentage of cases treated successfully declined rapidly and steadily with advancing age, approaching zero by the tenth year.

Nearly all the cases in which the vision improved to normal were those whose treatment was begun before the age of four years.

Cases under occlusion treatment must be closely followed until the age of 10 years so as to maintain good vision until the eyes have become sufficiently mature to remain at a normal level.

If treatment is begun before the age of four and adequate measures are

followed until vision is stabilized, amblyopia ex anopsia is a preventable form of blindness.

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THE CARE OF BABIES' EYES.—“Even though the power to focus is not present until four months later, the baby of only eight weeks may be able to recognize faces. Baby may turn his eyes toward sound or moving light at birth.

“And speaking of turning, let me say right here that it is very important to turn the baby's face away from such bright lights as the sun's direct rays. It is perfectly all right to let the sun strike the face of a baby, but it should strike slantingly, across his cheeks and not blaze into his eyes.

“Then there is another word to be said about ‘turning.’ Mothers living in apartment houses where light comes always from one direction must be very careful to turn the baby's crib about from week to week so that the child's eye muscles will develop equally. If he always lies in one corner of the room, his attention will be constantly drawn in the one direction. Thus, one set of eye muscles may become overdeveloped while others are not sufficiently stimulated.”—Katherin Foster Brokaw, M.D., in *The American Baby*, August, 1950.

Psychological Study of Partially Seeing and Children with Other Visual Problems

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DESCRIBES mental, personality, and performance tests which help in understanding the educational needs of partially seeing children.

MOST programs concerned with the partially seeing child or the one with some visual problem deal generally with the education and school placement of the child, and so-called psychological examination is frequently restricted to psychometric testing, with its resultant mental age and I.Q. It is well known, however, that in the clinical services offered by the Bureau of Mental Health, we do not make psychometric tests, but do give psychological study, and the visually handicapped child who is referred to us receives as careful consideration and study as would any other client.

It has been our privilege over the past ten years to work closely with the Prevention of Blindness Department of the Pittsburgh Branch of the Pennsylvania Association for the Blind, in which the eye medical social workers have been interested in a total program and have wanted the information, and the over-all picture of the child that comes from a comprehensive psychological study. We have records

of 95 children seen for the Prevention of Blindness Department, and of two other partially seeing children referred as such by other agencies. For the same period we have in our files records of 22 patients whose visual handicaps were just as serious, but who were referred for other reasons and whose visual problems had never been considered in their education, training, or treatment, and in some instances had not even been recognized. Our observations are based on the material in these records.

Visual Diagnosis Important

In examining visually handicapped children, we think it is important to know the diagnosis of the condition, the visual acuity without glasses, and the correction with glasses, if glasses are worn. This information helps us to arrange the proper physical conditions for the interview, the right kind of lighting, the prevention of glare, the size of print, etc. Eye medical social workers supply this information as a

matter of course, but it is suprising how seldom other social workers or even school psychologists realize its importance.

One of our 22 cases is that of a girl who appeared for the examination wearing very thick lenses. Her history had not even mentioned glasses. Since we did not know her eye diagnosis or whether or not the glasses brought the acuity up to normal, the agency had to wait for a report until that information was supplied. Another child was classified almost at the defective level by a school psychologist who mentioned that the child was cross-eyed but was not wearing glasses at the time. The prevention of blindness worker reported congenital cataracts with vision not estimated, because the lens was slow in absorbing and the opening was not good. (Incidentally, the child was about average in intelligence and the school psychologist evinced considerable feeling when he learned the child had been given further study.)

Mental Tests

Binet Tests

For purposes of estimating the intelligence level of the partially seeing child, we use the Hayes-Binet *and* the Stanford-Binet, Form L, unless the handicap is very severe. We find more often than not that the rating on the Stanford-Binet is higher than the rating on the Hayes-Binet. In one instance, where it was considerably lower, inspection of the failures showed that visual items as such (pictures, for instance) were not failed, but tests involving visual-motor coordination, such as copying a square and a diamond, were failed.

Wechsler-Bellevue Intelligence Scale

With the older child or adult who has a visual problem, we use the verbal section of the Wechsler-Bellevue Intelligence Scale, and as much of the performance section as the client can do. These latter results are useful not for purposes of estimating intelligence but for the additional information they give us about the way he sees. One young man, for instance, with concentric vision, could read very minute print when it was put before him, but he had difficulty in finding the place in a picture where something was omitted. And he was particularly confused when there was much shading or crosshatching on a picture, or when, in order to comprehend a total situation, the area was wider than his range of vision could encompass.

Performance vs. Verbal I.Q.

We might mention at this point that a performance I.Q. much lower than a verbal one should lead the examiner to investigate the possibility of a visual difficulty. We have in our correspondence files a now famous case of a young woman who received a verbal I.Q. of 87, a performance I.Q. of 53 and a total I.Q. of 69. The examiner did mention that she seemed to have trouble with her vision, for she held everything close to her eyes; so he gave her the color-blindness test and she did not seem to know colors very well! Because of her I.Q. of 69, she was classified as a mental defective and recommended for placement in a state institution. That recommendation was a blessing in disguise, for it resulted in further consideration of her case. An ophthalmological examination was obtained which indicated 1/10 of 1 per cent vision, due to optic atrophy.

A good school achievement test for clinical purposes is the Jastak Wide Range Achievement Test. This can be copied on yellow paper in as large size print as is necessary for the comfort of the child. Many of the children are unwilling to admit their handicap and insist they can see the ordinary form, but we take no chances.

Achievement tests bring out interesting bits of information. One boy who could pronounce words by spelling them out and who seemed to have a good basic idea of phonics said he never knew what he read. It took him so long to figure out the words that by the time he had read them all, he had forgotten the first ones. Obviously, he needed something more than just sight-saving textbooks. Another lad of superior intelligence (I.Q. 120) whose achievement in all subjects, but especially in reading, was above the level of his grade placement, was reported by the teacher, because he was particularly poor in reading and she did not think he would pass his grade at the end of the year!

Vineland Social Maturity Scale

Another tool that we find especially useful with partially seeing children (and with all handicapped children, as a matter of fact) is the Vineland Social Maturity Scale. We like to go over the items of social competence with the parents when it is possible. It is interesting to see how defensive some of them become when they must admit they are keeping the child dependent, or to have the unusual parent say, "Should my child be doing that at his age? I can see where I have been a hindrance to him."

We have noticed in working with the Prevention of Blindness Depart-

ment through the years that the workers have been able to present this viewpoint to parents earlier and earlier, so that the visually handicapped children who come to us now are, as a group, much less dependent than they were in former years. In fact, some of them are almost breath-taking in the things they are allowed to do.

Associated Defects

Children with partial vision or visual problems frequently have other associated defects—deafness, aphasia, weak sound association; cerebral palsy with spasticity in the hands, or athetosis; brain damage resulting in distractibility and fleeting attention; and other neurological conditions. These additional handicaps may call for other types of tests if we are to discover how best to deal with the child. They also add to the difficulty of the examination, since in many of these other handicaps we rely largely on visual tests. In such situations, the examiner must use all his ingenuity in order to learn what capacities the child has with which we may work.

Personality Tests

Human Figure Drawings Test

For purposes of knowing something about the personality of the child; how he feels about himself and his handicap, his relation to other people, his fantasies and his aspirations, there are numerous projective techniques. We have found the Human Figure Drawings and the Rorschach the most useful for our group. Before we discuss the emotional aspects brought out by these projective techniques, it might be well to point out here that both techniques can tell us more about the

things the child sees than does the Snellen Chart, and the results ought to set us at work developing something more adequate for such purposes than this chart. Both techniques can also help us to evaluate the intelligence level.

The drawing can measure improvement in vision. One young child who had an I.Q. of 94 on the Hayes-Binet on two successive examinations, had an I.Q. of 69 on the drawing of a man the first time, and 95 after he had suitable lenses after his cataract operation.

The Case of Ronald

When Ronald was 6 years and ten months old he did some human figure drawings. His drawing of a man had slits for the trouser pockets, in contrast to patch pockets on the coat; there was a wrist watch, with dots for numbers, and a ring; the socks were striped and the shoes had laces and heels. At the end of the interview he drew most accurately a Japanese plane but put swastikas on it because Hitler was in it (1945). The plane had a cockpit and a rear gunner. Then a U. S. plane came along with stars on its wings. It had a cockpit, a bomb bay, and two-gun Pete, but it didn't need a rear gunner. It shot up the Jap plane which went up in smoke, indicated by a mass of scrawls. Then he decided to draw another plane. A P-38 was out of date, according to him, so he drew a Hellcat, with all the accessories. This was attacked by three Jap planes, but it finished them off in a hurry, and they, too, went up in a smoke of scrawls.

Obviously, Ronald was a very superior child. The I.Q. on his drawing of

a man was 131. The Rorschach in its high form level, elaboration, and concepts above his age level, also established his intelligence as superior. In his case, the projective techniques gave a much better picture of his superiority than did the usual intelligence test, on which his I.Q. was only 105.

Ronald was graduated from Grade VI at the head of his class and his teacher thinks he is a genius whose achievement will be limited only by his visual handicap (he has macular choroiditis, high myopia, and poor peripheral vision).

The Rorschach Test

From the Rorschach we have learned that persons with visual difficulties cannot take in large areas of material, and that they do not do much with undifferentiated achromatic masses. They perceive contrasts, sharply defined areas, bright colors (especially those who have optic atrophy). A child himself will frequently say, "I can't see so well when it is all black." For that reason, we have made almost no use of techniques like the Thematic Apperception Test with its pictures in black and gray, and regret that the lovely colors of children's textbooks were not reproduced in some of the sight-saving class material.

We have encountered statements like these in psychological reports: "John did not have his glasses on at the time of this examination, so his Rorschach is poor." Or "This young man's vision is so bad that the Rorschach was not administered." That particular young man happened to do very well on the Rorschach. He saw the popular concepts, gave a number of excellent small details, showed a

good degree of organization, and, in general, created a much better impression in regard to his intelligence level than was gained from the intelligence test.

The Rorschach is not a test depending on vision, as is the recognition of words in reading or the letters on the Snellen Chart. It does not demand recognition of objectively meaningful material, and it can be used to estimate the intellectual level by the clearness and correctness of the forms seen, the type of concept, the degree of organization, and the logic of the thinking.

The most amazing record we have is that of a "blind" young woman. She has light perception, but she must be led along the street, and in a strange room she bumps into the furniture. At first she said, "If they are pictures, I can't see anything but the colors." She put her eyes right down on the cards and did see colors. But soon she saw other concepts—two red lips; a donkey with big ears; a tree with branches; a white house; red, white, and blue, and if the red had more stripes, it would look like a flag; scenery; and, last of all, Santa Claus in a red outfit. "Well, there's some blue stuff, I imagine it's the sky; that's what they usually use blue for, and white. It might be snow. There's some more blue over here. I'd say that was more scattered: makes it look as though Santa were going somewhere in a sled, the way the sky looks when you are moving."

The Rorschach test, especially, has revealed or predicted epileptic states, confirmed by an electroencephalography; and has uncovered underlying, deep disturbances amounting to psychoses, when there was an apparent surface integration.

Problem Parents

The emotional states in the child as they are revealed by the projective techniques are more closely related to the attitude of the parents than to the child's handicap. We do not so often find the child anxious about himself as he is anxious because the parent is anxious. Anxiety is contagious. Consider the mother who spends her time weeping over her child's defect; or the one who, in the presence of the two children, greeted another mother whom she recognized as an acquaintance of boarding school days with, "Did you ever think when we were in Grahame that we would have troubles like this?"

There is also the parent who spurs on the child to greater achievement than the child has capacity for; he feels he must be good *and* successful to be loved and accepted and frequently develops many compulsive traits. Of one little boy, the report states, "He works with an air of desperation that is heartbreaking; life should be made easier for him." One small girl who in addition to having a serious visual handicap is not very attractive, has been made conscious of her features by a mother who is always trying to make her pretty. The child already has a well-developed fantasy life in which she is a princess!

Some parents have a paranoid attitude about the child's handicap—refuse to accept it or face it—and create the same attitude in the child. The father of one lad with eccentric vision was moving out into the country so that his son would not be placed in a sight-saving class. It was pointed out to the father that at many points in his life the son would have to face his difficulty and might better be helped to do it now than run away from it;

that, for instance, he could never get a driver's license and all his friends would probably be driving. The father was indignant and did not see why we thought there should be such discrimination against his son.

Psychological Study Not Enough

From these examples it is clear that psychological study alone is not the whole answer; associated with it there must be facilities for treatment of both child and parent. The children under the supervision of the trained workers in the Prevention of Blindness Department receive understanding help, as do their parents; but there are large areas where no such help is available and, indeed, where not even good medical service seems to be available.

Recently we examined a girl whose case we shall state as illustrative, whose defect was not even recognized. At one time she was in an institution for defectives and was removed. She became a problem because of the family conditions and, later, placement was again requested. The child welfare worker reported poor vision, and an ophthalmological examination was requested. The physician reported that

the best vision he could obtain with glasses was 20/400 and without glasses she could count fingers. In the institution, after she had glasses, she was able to get around without falling over chairs and bumping into things. On a school exclusion report, dated in May, the school psychologist made no mention of any difficulty in vision, and the examining physician reported visual acuity as normal! The school psychologist stated in his report, "Actually we do not know everything about this girl." Truer words were never written!

Hopeful Trend

One closing optimistic note, at least, from the Pittsburgh area, is that in going over our 95 cases we note a trend toward earlier recognition and referral of the child with a visual handicap. To be sure, the occasional neglected 14-year-old still turns up, but he is the exception. The earlier we can work with these handicapped children and their parents and teachers, the less opportunity there will be for the development of unfavorable adult attitudes and unpleasant personality traits and unhappiness in the child.

Teaching the Partially Seeing Cerebral Palsied*

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DISCUSSES educational needs for cerebral palsied children with limited vision, pointing out opportunities for cooperation of parents, teachers, general physicians and oculists in providing the best possible education for these handicapped children.

CEREBRAL palsy differs from other types of handicaps in that its nature is often definitely multiple. Frequently there is a combination of both motor and sensory involvements. While there seems not to be a positive pattern for these combinations, some are more frequently seen than others. Two of these combinations classify the individual as a partially seeing cerebral palsied individual. It is a "sketched" educational program for these individuals with which this paper deals.

Common Eye Symptoms

The two combinations to be considered are strabismus or squint in the spastic, and nystagmus in the ataxic. Strabismus or squint is the failure of the two eyes to direct their gaze simultaneously at the same object because of muscle imbalance. Nystagmus is an involuntary, rapid move-

ment of the eyeball. Since spasticity is excess muscle tone and ataxia is extreme and continuous dizziness, it is understandable that the above eye conditions are sometimes found as secondary handicaps. It is also quite understandable that these associated handicaps may be overlooked, but the teacher of the partially seeing cerebral palsied child must adjust her program so as not to further handicap the child by letting his vision become worse.

Need for Oculist

If the child has not had the care of an oculist, particularly in the case of strabismus, the teacher should urge the parent not to overlook this medical care. The parent should be informed as to the possibility of uncorrected strabismus resulting in loss of vision in the deviating eye. If the oculist has recommended eye exercises or the use of an occluder, the teacher can do much to encourage the child in continued use of them. The teacher, more than the parent, often can help the

* Presented during the Cooperative Workshop, University of Tennessee, Knoxville, June 13 to July 20, 1949; consultants: Dr. Florence Essery, Mrs. Anna Taibl, and Mrs. Lucille Workman.

child overcome any timidity he feels in wearing a patch. Sometimes, for instance, the "small fry" is taken with the idea of being akin to the pirates of old.

In the classroom, the alert teacher can make the partially seeing cerebral palsied child more comfortable by adhering to sight-saving class methods as far as possible along with the needed adjustments for the cerebral palsy. Obviously, the adjustments will vary with the severity of the motor disorder and the child's progress, as well as with the recommendations of the oculist. However, consideration must be given to such aspects as materials and equipment, curriculum adjustments, procedures, and guidance.

Materials and Equipment

Minimum of 30 footcandles of correct and adequate illumination on working areas*

Adjustable desks and seats so that they may be made to fit the individual and keep work at eye level. Especially built chair and desk may be needed if lack of balance is severe

Desks with adjustable tops for proper reading angle. Use of book racks if only flat-top desks are available

Chalkboards, preferably gray-green, at eye level and with minimum of glare. Portable chalkboards may be needed if child is not mobile

Large (1 in. diameter) chalk

Typewriter with Bulletin size type. Heavily-inked ribbons

Copy holders

1¼ in. steel clips (for holding books and paper in place)

* See *Classroom Lighting*, Publication 498, National Society for the Prevention of Blindness.

Perma-dull crayons (large size)

Globe for sight-saving classes (ordinary globe with details painted out may be used: blue for water area, black for land area, outlines in yellow)

Off-white or white, heavy, dull paper

Unprinted newspaper

Large wash paint brushes

Tempera paints

Soft-lead pencils, large size (avoid blurred, fuzzy marks)

Handcraft materials and educational toys (according to age interest level and motor-skill development)

Large type reading material in clear type on heavy, dull paper with wide margins and good spacing

Talking Book Machine

Recording Device

Cot (or cots for resting)

Curriculum Adjustments

Reduced academic program with fewer subjects

Planned schedule to include eye rest periods following close eye work periods

Avoidance of such courses as sewing, mechanical drawing, laboratory work with the microscope, and excessive library reading

Allowance and adjustment in physical education training classes according to motor skill

Frequent planned rest periods

Procedures

Training in eye hygiene and care of glasses (cleaning, protecting from scratches, keeping frames in shape, and developing sight-saving habits)

Adjust seats so that light falls on work, never in eyes

Write on chalkboards at eye level in large, clear manuscript

Make added allowance of time for slow motor controls

Cut assignments to minimum written work for obtaining desired educational skill. Do not repeat processes beyond requirement for learning in the individual

Use activity teaching when possible to enable child to change from one type of work to another whenever he becomes tired

Provide student or teacher "transcription" service for those who cannot write or typewrite. (Some provision for compensation either financially or through service clubs, school "letters," and the like can usually be arranged)

Let big charts and chalkboard work replace book and pencil as much as possible

Minimize visual aids and eye-learning

Stress auditory methods.

Regarding some specific procedures, Viola Cardwell* writes: "The ataxic who is always dizzy becomes increasingly so and gets nauseated when he is asked to hold the focus of his eyes on a given near point. Because of this, he does not want to read and he presents a difficult teaching problem. He may become angry and have temper tantrums if the teacher persists. If he can keep his eyes moving, he does not have the same difficulty. Dr. [Winthrop M.] Phelps has said that to help the ataxic child, the teacher can use large alphabet letters and flash cards on the wall at the opposite side of the room. At this distance, focusing does not have the same disturbing effect and when, through practice, the child has

learned to read without hesitation, he can be shifted to work at close range."

Miss Cardwell adds: "The short attention span of the cerebral palsied child is a factor that must be taken into account by teachers . . . who work with these children. Regarding the attention span and its relation to the child's ability to focus his eyes, Dr. Arnold Gesell has pointed out some interesting factors. He states that in the child with disordered movement, the extra effort that he has to make . . . 'exhausts attention, lack of success eventually dampens initiative, extraneous movements and their accompanying proprioceptive sensations distract attention.' He states, also, that the child's ability to focus his eyes on an object is closely associated with his ability to fix his attention and is consistent with his total behavior pattern. The spastic with his labored movements will have difficulty in bringing his eyes to bear on an object and in holding his gaze and will also have the same difficulty in fixing and holding his attention."

Regarding learning to write, Dr. Phelps states: "Writing as a skill may prove difficult in a given instance. If typing proves simpler because of the particular mechanical difficulty, the emphasis should be placed on learning to write a signature only, since this is essential and the rest of the training should be on typing."

Miss Cardwell adds that "electric typewriters are found very advantageous in some classes as they respond to the lightest touch."

Guidance

The teacher of the cerebral palsied finds in her class not only the mildly affected but also the severely affected

* Cardwell, Viola E., R.N., M.A. *The Cerebral Palsied Child and his Care in the Home*. New York: Association for the Aid of Crippled Children, 1947.

child. For one she sees a return to a regular school situation and eventual graduation with his non-cerebral palsied classmates; for the other, slow academic growth and withdrawal at the school age limit. For each, she uses the materials, the equipment, the curriculum adjustments, and procedures, within her knowledge and grasp, which are best suited to his needs. But in either case, the teacher's job is not complete unless she has helped prepare the pupil for a wholesome, mature life as the most useful citizen within his capabilities.

The partially seeing cerebral palsied person needs especially skilled and wise guidance if he is to reach the full realization of his capabilities. He should be encouraged to carry through on his education and training as far as his abilities and financial backing will allow. For those of superior capabilities, mild disturbances, and financial adequacy, the task is simpler than for those more seriously handicapped and from families of moderate means. But both types need social skills, training for leisure-time activities, as well as vocational guidance. Each of these should become a part of the teacher's conscious efforts early in the training of each child.

Recreation

Loneliness too often plays a large part in the life of the partially seeing cerebral palsied child and adult. Recreation must be planned to suit his capacities, his mental age and his developmental needs as they change. The teacher should plan for this in the early part of his educational experiences, providing such recreation for him. Even more important is it that she guide him into an understanding

of his recreational needs and capacities, helping him to develop some interests and abilities which will see him through life.

Participating with Others

The child should be given opportunity to share in games of other children to the extent that his disabilities permit. He should be taught, however, to accept the fact that there are some games in which he cannot actively participate and he must not be allowed to spoil the play of other children. He may learn to participate on a vicarious experience basis, and he can be taught to look for and to engage in the less active aspects of the game or some related activities. For instance, to participate in baseball he can learn all the rules and be the umpire. This attitude, once developed, will serve to make him find a place for himself in recreational activities throughout his adult life.

Opportunities should be given the spastic child to express himself and to develop through creative activities. Any special abilities or interests should be noted carefully and used to the fullest in giving him an outlet for expressing himself creatively and in developing hobbies for leisure-time activities and more certainly as the basis for vocational guidance.

Games

For helping the younger child develop an alertness, will power, self-discipline, a cooperative attitude, taking turns, etc., such games as these may be used: "Hide the Thimble," "Button Button," balloon games, bean-bag relays, and "Ten Little Indians."

Handicrafts such as clay modeling and using pine cones, birch bark and other things for making toys or ornaments may provide lasting recreational interests.

As the child matures, he and his teacher together may devise ways in which he may adapt certain games to his motor skills. For example, he may play checkers successfully if the board has circular depressions in the checks and the checkers have knobs attached; card playing may be simplified for spastic hands by using a card rack or simply inverting a box and using the cover as a slot for holding the cards. Once he learns that he may participate and be accepted in recreational activities, he will have the incentive for making his own adjustments.

Talking Book

It is recommended that the partially seeing cerebral palsied be introduced to the Talking Book Service available for the blind. If the individual's vision is almost completely impaired (20/200 or worse in better eye after correction), he may be loaned a machine through his local service for the blind.

Recordings of some two thousand titles are available through free mail service. These include current "best sellers," current events, *Reader's Digest* articles, and classic literary pieces. The caution for the teacher is that this device should not be introduced too early and that particular care be given in selecting material on the "listening level" of the child. If carefully introduced, the child will have a constant source of recreational "reading" and intellectual improvement, in the use of which he may be entirely independent. Through it, he

may gain information for interesting conversation in groups or go "day-dream traveling" in his lonely hours.

Some of the available titles which have proved interesting to the junior high school age group are: *My Friend Flicka*; *Treasure Island*; *Bambi's Children*; *The Yearling*; *Poe's Short Stories*; *Archy and Mehitabel*; *The Egg and I*; *Call of the Wild*; *Lassie Come Home*; *How to Raise a Dog*; *I Never Left Home*; *Uncle Remus*; *Three Times I Bow*; *Mrs. Mike*; *Adventures of Sherlock Holmes*; *Robinson Crusoe*; *The Spy*; *Moonstone*; *Tom Sawyer*; *Huckleberry Finn*; *Connecticut Yankee in King Arthur's Court*; *Bret Harte's Short Stories*; *Young Jefferson*; *Black Camel*; *Best Short Stories of 1944*; *Little Minister*; *Pride and Prejudice* (dramatized with cast); *Little Women*; *Thunderhead*; *Mary Poppins*; *Lost Horizon*; *North to the Orient*; *National Velvet*; and *Three Musketeers*.

Encouraging Self-confidence

The partially seeing cerebral palsied individual, more than the less handicapped, needs to be encouraged to seek, not shun opportunities to meet people. He should be encouraged to look his best. Self-confidence is constantly improved, particularly in adolescents and adults, by good grooming and by wearing suitable, well-cared-for clothes. The child should be urged to breathe as slowly and regularly as possible, and to take things slowly—not rushing and getting out of breath from hurry as well as from nervousness. Stopping and looking over the situation which he is about to face is an aid. Sometimes pausing in the doorway before entering a room helps the spastic individual to "collect himself."

Developing a Philosophy

Something must be done all along the way to help the individual develop a philosophy about his problems. The relative unimportance of a spilled dish, or some other mishap should be stressed. Others sometimes have accidents, too, and no one remembers any of these mishaps for very long, or thinks any less of the person accidentally causing them. The child who is helped to develop a sense of humor can often carry through without emotional disturbances a situation which would otherwise cause him extreme embarrassment.

The alert, interested teacher who "knows" her child will use the most effective ways of helping each individual develop a mature, well-adjusted attitude toward himself and his future.

Vocational Possibilities

Any listings would be merely suggestive for the teacher to use as a starting point in her thinking regarding leisure-time activities and vocational possibilities for the partially seeing cerebral palsied. The personal competition faced in large industries would add greatly to the confusion of the cerebral palsied person and place him at a disadvantage constantly, even if he had overcome his handicap to a great extent. In economic "tightening-up," he might well be among the first "curtailments" because of his inability to work under pressure and at maximum speed. His visual difficulties would further subject him to economic insecurity. Add to this his possible lack of mobility and need for rest and relaxation and one sees immediately the disadvantages of trying to enter the business world on a

personal competitive basis. Because of this, it is suggested that developing his particular abilities and interests into some *self-owned* venture is the first and most promising opportunity for the partially seeing cerebral palsied individual. On this assumption, a few types of such ventures are listed: Grocery; Pet Shop; Novelty Shop; Book Store; Lending or Rental Library (delivery service if possible); Percentage Craft Shop; Home Supply of Gift Wrappings, Cards; Florist Shop; Swap Shop; Barter Basement; "White Elephant" Store; Newsstand; Home Magazine Service; Music and Record Store (rental service included); Roadside Stand; Boarding Pets; Training of Pets; Apartment Finder; Classified Mailing Lists (sold and typed); Shampooing Rugs and Furniture (service in homes); Caring for Trees and Shrubs; Service Center (laundry equipment, sewing machine, hairdryers, etc., for use of those in small apartments who do not have—may also include rental of individual pieces of equipment); Social Center of Club Center (card tables, radios, phonographs, games, equipment for serving refreshments, etc., for use by appointment); Leather Binders or Albums (no fine "tooling") for pictures of special occasions, family snapshots; Wooden Objects without detail work such as bathtub vanity trays, sewing kits and screens, simple cutout toys, kitchen bulletin boards, dog houses (outdoor and indoor), driveway markers, planted flower boxes, storage-seat boxes (covered *to order* with material to match drapes); Raising Fruit or Nut Trees (market either trees or nuts and fruits); Growing and Hybridizing Flowers (sell bulbs, seeds and blossoms); Planting and Tending

Window Boxes and Indoor Containers for Commercial Houses, Apartments, Clinics (service and replacement charge for year-round tending); Raising Herbs (sell as plants, planted window gardens, or dried in attractive jars) and selling accompanying book of select and rare recipes (showing unusual uses for herbs); Mushrooms (in darkened cellar); Cacti Window Gardens; Gourds of Various Shapes and Sizes (made into decorative ornaments); Raising Squabs (to order for hotels, restaurants, etc.); Raising Broiler-size Chickens (hotels, restaurants, etc.); Breeding and Training Canary Singers; Raising Rabbits (for skins, pets, meat, or laboratory animals); Raising Guinea Pigs, White Mice and White Rats (for biological laboratories for experimentation); Raising Goats (skins or Milk Farm); Raising Caracal Sheep (for furs).

The above suggestions have been made with the consideration of little or no capital for investment in the initial stage of the venture. Some of these occupations may not provide full support to the partially seeing cerebral palsied. Yet if they serve no other purpose than to give him self-confidence and an incentive to work and they prevent him from brooding over his handicaps, they will prove a boon in the fullest sense of the word.

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LET'S PRETEND YOU'RE BLIND!—"What is now the program 'Let's Pretend' had its beginning when we decided to take our supervisors and foremen into the land of make-believe and emphasize the value of eyesight by giving them a preview of blindness. The initial group of about 60 were seated in the company cafeteria, and after a brief talk on safety and our proposed program, were blindfolded. They then were served a meal—each plate had the articles of food in a precise pattern which was explained to the group. They were told the exact place on the table to locate knives, forks, spoons, salt, pepper, coffee cups, etc., and while they ate their meal I narrated 'one day in the life of a totally blind person.'

"Believe me, the results were rather terrifying to the group and when the session was over there was no comment, and we felt that this approach had been all wrong. Within 48 hours we discovered foremen and supervisors who had never worn eye protection were applying to First Aid for spectacles and most had told department employees about the experience. We soon had to stock up on goggles and spectacles as our supply which heretofore had moved slowly was now exhausted."—E. F. Chittenden, *Monitor* (Ohio Industrial Commission), June, 1950.

Vocations for Sight-Saving Class Children

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POINTS out achievements of graduates of classes for the partially seeing.

ONE of the essential outcomes of education, whether it be regular or special, is the ability to make a living. Most people find it necessary to work, and fortunate is the child who has an opportunity to attend a school that is realistically oriented and programmed. A broad view of education includes vocational as well as the classical and the cultural aspects of learning and living. This does not necessarily mean vocational education as such but it does mean a vocational orientation of many subjects, courses, and services of the school.

The whole problem of preparing the child for living and making a living is somewhat more complex when vision is limited. The philosophy of special education for partially sighted children is one that recognizes the visual limitation of the child and his need for special help and protection while at the same time remembering that in most respects he is able to do the things that other children do. He recites in the regular class, he participates in sports and other activities, and as an adult he can achieve by the

side of his normally sighted neighbor in many jobs.

How well the partially sighted individual meets the problems incident to his visual limitation and how fully he realizes his potentialities depend upon how fully he, his parents, his teachers, and his employers understand and accept the educational and vocational implications of his handicap.

There are two dangerous shoals on which the vocational possibilities of the partially sighted person may run aground: (1) the refusal to recognize the limitation of partial sight; and (2) the overemphasis of the limitation with consequent overprotection and a narrow outlook on vocational possibilities. Between these two dangers is a wide expanse of good clear water with plenty of room to sail safely.

Recognition of Visual Limitation

The frustration of the partially sighted person who refuses to recognize his visual limitation and sets out to find a place in a vocation practically closed to him because of his handicap is truly tragic. Briefly, here is the story

of one such young man. As a child his parents refused to let him attend a sight-saving class because they feared association with partially sighted children might not be good for him. Somehow he struggled through public school and college with, as he described it, his "nose always in his books." At what cost to vision and mental health he did this, I do not know, but I do know that as he told the story of his struggles and his frustrations the tenseness in him overflowed through twitching facial muscles and fidgeting fingers. Now, in his late twenties, he has two college degrees but no job. There are jobs he might have but he refuses these because they are not in line with his special preparation. He is unwilling to adjust to a practical world in which he finds an unwisely chosen vocational avenue closed to him.

Equally tragic are those instances in which too much emphasis is placed upon partial loss of vision, and the child is given too much protection. This overemphasis may be carried to the point that the partially sighted child is viewed as educationally and vocationally blind. The result can be a serious narrowing of vocational preparation and opportunity.

Wide Range of Vocations

If we look at the wide variety of jobs being successfully performed by former sight-saving class pupils we can see the wide range of work possibilities for the partially sighted. In 1942 the Detroit Public Schools published an Employment Survey of former Detroit sight-saving class pupils. Almost eight pages of this report are filled with a listing of the jobs in which these former sight-saving class pupils were found work-

ing. A committee in Ohio, in preparing a report for the White House Conference, has just completed a partial inventory of jobs held by former pupils of sight-saving classes in this state. During the summer an advanced workshop for sight-saving class teachers and supervisors was held at Ohio State University. The people in this workshop supplied valuable information on the postschool employment of their former pupils. From the various sources mentioned has been compiled a list of jobs held by partially sighted people, which is presented here.

Occupations of Former Pupils

Professional and Managerial

Among the graduates of sight-saving classes, a large number are now employed in law; medicine; ministry; social work; camp work; accountancy; writing; engineering and surveying; various researches; advertising; teaching and education; hospital work; nursing; physical therapy; radio; pharmacy; library work; art; newspaper work; photography; personnel work and counselling; business enterprises such as shops, real estate, private policing, manufacturing and restaurants.

Clerical and Sales

In this category are included sales work in such fields as advertising, venetian blinds, shoes; clerking in a variety of stores; work in undertaker's establishment; library work; work in dentist's and doctor's offices; clerical work in hotel, shipping, filing, mailing, cost accounting, general office work; comptometry; dictaphone work; switchboard work; mimeographing, printing, delivery service; messenger service; U. S. postal service.

Service Occupations

Some sight-saving class pupils are engaged as beauty operators; hospital orderlies; nurses' aides; governesses; bowling alley attendants; hotel workers such as waiters, housemen, elevator operators, porters, cooks, dishwashers; houseworkers such as nursemaids, janitors, laundresses, window washers.

Agricultural and Kindred Operations

Still other students have become farmers; gardeners; stock inspectors; engaged in forestry; fruit graders and sorters; greenhouse workers.

Crafts and Manual Occupations

Among this group are included skilled, semiskilled and unskilled workers such as plumbers; painters; engineers; plate glass workers; potters; butchers; metal workers; carpenters; sign painters; mechanics; blue print makers; window dressers; canners; candy makers; bakers; radio installation workers; electricians; pressers; bricklayers; decorators; moving company workers; sweepers; electric mechanics; welders; grinders; roughers; bench workers; construction workers; artificial flower makers; linoleum layers; upholstery workers; rippers; renovators; belt makers; laborers; laundry workers; truck and cab drivers; R.R. section and car shop workers; street workers; and factory workers.

Occupation and Visual Ability

It will be noted that partially sighted people are found in a wide field of jobs ranging from the unskilled to the highly skilled and professional. Not all of these people with limited vision could qualify for all of the jobs. Neither can the sight-saving class pupil look

forward to filling a particular job simply because that kind of work is being performed successfully by someone with poor vision. Placement and ability to hold a job depend upon physical and mental ability, interest, aptitude and, of course, general and specific preparation for the work as well as upon visual ability. It is encouraging to the partially sighted pupil to learn that his vocational outlook is not narrow—that there are many vocational avenues open to him.

The Teacher's Role

While the primary concern of the sight-saving class teacher is not specifically vocational, she plays an important role in the development of self-reliance in her pupils, in the nurture of healthy interests and attitudes and in the cultivation of good work habits while in school. She helps her pupils and those who work with them to understand and accept the functional implications of visual handicap. She can further lay the foundation for an intelligent approach to the problem of vocational preparation and placement later on by gradually building up general information on how people make a living.

In a more specific way the sight-saving class teacher or her supervisor is a key person in the coordination of those services in the school and community that point to vocational preparation and placement. By special preparation she is the person in the school best fitted to understand the child's visual difficulties and the problems inherent for vocational education and job placement. The special teacher's counsel is valuable in connection with any program contemplated or carried out for the child.

In the larger urban school districts the sight-saving class teacher will work with child-study and counselling services in the school, well developed vocational schools, and placement services. In smaller schools she will not find all

of these, but in either case she can usually find a way of pointing the partially sighted child in the direction of a productive, satisfying adulthood in a job that fits him and in which his employer will find him fit.

"Eyesight is of such importance to life, welfare, and happiness that a person naturally goes to any length to preserve it or to prevent its loss. That is, if he is aware of trouble with his eyes. Since most cases of blindness are either preventable or curable if taken early enough, it is a reflection upon our intelligence that the tragedy of blindness should occur."—
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The Early Days of the Sight-Saving Class

Helen L. Smith*

Boston, Mass.

DESCRIBES pioneering in education of the partially seeing child.

IT was due to the interest and endeavor of Dr. Edward Allen, for many years Director of Perkins Institution for the Blind, that our first sight-saving class was established in Boston. Dr. Allen had long been troubled by the problem presented by the many children who, although not actually sightless, became students of the schools for the blind. He felt that there should be some means of instructing them rather than by the use of Braille and the other media by which the blind were taught. He was aware that in some countries of Europe work had been started along the line of educating such children in a manner suitable to their handicap.

In 1909 he had been sent abroad to inspect the care of the youthful blind in Europe. In London he learned of the classes held there for "myopic" children. Upon returning to Boston he endeavored to interest the Superintendent of the Boston schools, with a view to opening a trial class for the partially sighted children of that city. However it was not until 1913 that

provision was made for establishing the class of which I became the first teacher.

The first task awaiting me after being selected to open the class was to find the children who were in need of the help it could afford them. I had been given a list of names with instructions to look those children up and invite them to come to the class. It all sounded very simple and pleasant, but it did not turn out that way.

Many of the parents were foreigners with such scanty understanding of English that it was difficult to make them comprehend the aim of this new project. "My child sees all right," a mother would say. "I want him to stay in that school where he is until he graduates." Some thought it was just a scheme on my part to make money. One mother who admitted that both her daughters had poor sight said, "You put glasses on my girls and nobody will want to marry them." Apparently possible blindness was but a slight misfortune compared with spinsterhood.

Another obstacle was the fact that the children lived in such widely sepa-

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rated parts of the city that it was very difficult to get them all together in the building which had been selected. So far no provision for transportation had been made.

Improvising Materials

When at last the little group was assembled I was at a loss for teaching material. I had spent much time and effort in making fonts of large letters and figures, maps, handwork, and other things, hoping that we could use them to advantage. Some of it did help out but it was far from being enough. I knew that the children should be given all the instruction possible with a minimum of strain upon the eyes. That meant that reading as we had taught it must be in large measure eliminated and a great deal of oral teaching substituted. I knew that in the "myope" classes in London blackboards were used in place of books but I could not see just how that could be done with my group. In London they had a special desk for use in the classes. One of these was made for me and a blackboard which could be moved up and down in a frame was also constructed. These did help to a certain extent, but I did not find them very practical. A picture of the class taken at this time shows both these devices.

It was lucky for me that I had but six pupils that first day, for the task of keeping them occupied was a serious one. I had made out an order for handwork material, but it had not been delivered, and all I had was some raffia. We started some mats but most of them were never finished. We told stories, played games, had a number drill, and read a little from such books as we had.

By the second day I had discovered that by using a large soft lead pencil on grayish white paper I could write material which the children could read with apparent ease. I know now that if the characters had been smaller it could probably have been read still more easily. However, at that time I had an idea that any reading matter given them must be very large. I was much afraid of giving them something to do which might be as harmful to their eyes as the work of the grades from which they had been taken.

We had an Aldine Phonics Chart, some flash cards for phonics and numbers, two or three primers in fairly large type, a couple of small printing sets, and some anagram blocks. We had one large wall map, and I had made some outline maps of papier-mâché.

Very soon after we were established we had a visit from Dr. Allen. He expressed satisfaction at the start we had made but said that we should have more handwork. When I told him that so far I had been unable to obtain any material he told me to buy whatever we needed and send the bill to him. That afternoon I went shopping, and the next day found us making mats and baskets. This was something new, the children enjoyed it, and it gave a great lift to our morale.

Dr. Allen continued to visit us from time to time. One day he came and wanted to take a picture of the class at work. He was preparing a report and wanted to include a picture of this latest branch of his work.

Our building was known as the Old Thornton Street School, and was an annex of a primary school directly across the street. The teacher of the third grade in that school was in

charge of our building as well as her own, and any matter of importance had to be referred to her. I did not know that she should have been consulted about the pictures, and of course Dr. Allen knew nothing of this formality. Probably I should have been better informed, but I wasn't. It was certainly a shock when the janitor walked in and announced that Dr. Allen was to go across the street and report to the teacher in charge. I was aghast. For anyone to issue a command to the director of Perkins Institution was utterly beyond my comprehension. However, he was not at all disturbed and the interview must have been most amicable. He was much more concerned lest the affair might react unpleasantly for me than for the lack of consideration shown him.

This was the only picture ever taken of the class, and it did show up the children and what they were doing very well. One little boy is shown reading from the blackboard. Another boy is doing arithmetic at the reversible blackboard, made like those used in the London class. The picture shows twelve children and it must have been taken not long before a second teacher was assigned to the class. It shows the desks on movable platforms. They were a motley collection but they served the purpose until better ones were provided.

Types of Pupils

Although we had but six pupils the first day—and one of them failed to appear the second morning—we very soon acquired two more. One of these was a seven-year-old boy with interstitial keratitis, and the other a girl of nine whose eye defect was negligible compared with her mental lack. Al-

though she increased our number and was a happy child, she was not really the type we were trying to help.

One person who was very helpful to us in those early days was Mrs. Gulliver, principal of the Dillaway School for Girls. She was the first principal to be cooperative in those days when I was looking for pupils and finding few. She promptly found three children in her district, and a building in which we could start the work. Not all of the children were sight-saving class candidates but they formed a nucleus, and soon we were able to select those who really needed our help.

In June, 1913, we closed school with eight pupils. In the autumn two had been sent back to the grades, six were ready to go on with us, and presently two more came. By that time the Commission for the Blind had assigned to one of its workers the duty of looking up new pupils. This was a great relief to me. Also the school committee had appointed a regular oculist who would examine the eyes of children with doubtful vision, and decide whether they were subjects for the class. At the same time provision was made for streetcar tickets to be given to those who lived too far from the school to walk to and from it.

Some further repairs had been made upon the building. It was still a shabby place, but the walls had been repainted, additional windows put in, and provision made for artificial light on dark days. On the whole our affairs seemed to be looking up. Still I was far from feeling particularly optimistic.

Unassigned Homework

One difficulty that was hard to correct was that many of the children would use their eyes for harmful tasks

when out of school. While I was working long hours into the night preparing work which I felt they could use safely, they would read fine print, do embroidery, attend movies, and regard their glasses as something to be laid aside as soon as they were at home. The parents would intend to be co-operative, but in many cases the families were large, and mothers could not be always on the alert to see what their children were doing.

During this term some of the more capable girls learned to knit. They made scarves, face cloths and other articles for which material was provided by the school. I was surprised to see how rapid was the progress they made on their work, until I found that some of the work was being taken home. Thus they were using material intended for use in school, and also allowing other members of their families to work upon the articles.

One day while we were still the only class in Boston, and were not finding the going very easy, we were visited by Dr. Dyer, then Superintendent of the Boston schools. He explained that he wanted to see for himself what kind of children we had and what we were doing for them. I thanked him for taking time to visit our little group and mentioned that so far we had received but scant attention from most of the school officials.

"To them," he said, "this seems like a pretty small potato, but wait until it has grown larger. Then they will be glad to notice your work."

It reminded me of the verse my grandmother used to quote, "Large streams from little fountains flow, Tall oaks from little acorns grow."

Whether we were regarded as a potato, a fountain, or an acorn, we

were certainly small, and I was not too optimistic about the proportions which we might ultimately attain.

Growth of Class

When I started the class I was told that when the number of pupils had increased to twelve I was to have an assistant. As weeks went on and more children came in—for our poor little class was indeed becoming popular—I found that I had pupils in all of the first six grades. It was difficult to give the fourth, fifth, and sixth grades even a part of the history, geography, and language to which they were entitled, without slighting the lower grades. I tried combining grades and having the older pupils help with the younger ones, but we needed another teacher. So it was that in April, 1914, just a year after the opening of the class, Miss Sarah Lilley was appointed to be my assistant. She was a woman of just the right temperament for the work. Like myself she had been a teacher at Perkins Institution where she had taught history and geography. I was glad to turn over to her those subjects as well as much of the language work. A great deal of the teaching in all these subjects had to be oral, and in this she excelled.

On large sheets of paper my assistant made maps, colored and printed in strong colors. She used these very successfully in her work. We had a large wall map, a large globe and several small globes. I used to spend my Saturdays browsing around in the stores on the lookout for anything which we could use.

I have no doubt that the teachers of sight-saving classes today have to make some of their own material, but not as much as we did, I am sure. We

had some small printing sets but they were slow and clumsy to use. If I had had a Bulletin typewriter I should have felt that the world was mine.

However, we got along with our hand-written material, and what a store of it we acquired. It was clumsy to handle, became dirty and ragged, and took up too much space in the storeroom, but we had some pretty good material. There were stories like "Water Babies"; "King of the Golden River"; and "Rip Van Winkle"; as well as material for history, geography, and science.

Large Type Printing

After considerable delay some large type printing was done for us in one of the Boston vocational schools. However, before this was accomplished the Howe Publishing Company in Cleveland, Ohio, was making a regular business of printing books in Clear Type, and we received a portion of its output. The Boston Class printed some sheets of spelling and arithmetic and the "Story of Robin Hood."

Class Moves

We remained in the Thornton Street school until 1920. By that time the building had become so decrepit that it did not seem advisable for us to continue there. We were transferred to a school where we had a much better room. By that time two other classes had been opened in Boston, and my class had been divided. I was left with a group of twelve containing Grades 2, 4, and 6.

We had sent out our first graduate in June, 1915. She received her diploma with Grade 8 of the Dillaway School

and, in the autumn, entered the High School of Practical Arts.

Progress

I remained in the work for eight years and during that time no fewer than sixty pupils passed through the class. We had all grades of mentality. A few were exceptionally bright—one or two even gifted—and some were pitifully slow. Two members of the class had been considered definitely feeble-minded, until we proved that their backwardness was due to the condition of their eyes. They both graduated from Grade 8, and when I last heard of them they were earning their livings, which they could not have done if they had been mentally deficient. This was before the days of Binet tests, so we had no way of determining quotients of intelligence. Shortly before leaving the work we began giving the tests and I found that one girl had an I.Q. of 150.

Encouragement from N.S.P.B.

I well remember the visit we received from Mrs. Winifred Hathaway, how kindly encouraging she was—and it was in the days when I certainly needed encouragement. Another distinguished visitor was Lady Francis Campbell from England. Miss Ida Ridgeway, field worker from the Commission for the Blind, was a frequent caller. She brought new pupils as well as a pleasant bustle of enthusiasm which was always welcome.

During all this time Dr. Allen was very helpful. The class meant much to him and he supported it loyally, both with money and his kind and encouraging spirit. Nor was our class the only

one he aided. He was equally generous with other classes in getting started. I am glad he lived to see classes for the partially seeing firmly established as a regular feature of many school systems, and I am happy to have my name mentioned with his in the pioneering of this movement.

I am glad that I was chosen to teach the first class of this kind in America. To those now in the work, I offer congratulations for their vastly superior equipment, and sincere wishes that they may find the task as agreeable as I did. May they too look back to their work as happily as I do now.

"Prevention of blindness includes every phase of ophthalmology, from the training of an ophthalmologist and the development of his skill, not only in eye surgery but in medical diagnosis as well, to the setting up of eye clinics, eye wards in hospitals, the training of nurses in eye work, development of adequate teaching departments in our medical schools, the establishment of research facilities, libraries, eye journals, and special medical organizations. It includes the programs for testing and examining the eyes of school children, the sight-saving classes, industrial ophthalmology, the tests for the drivers of motor vehicles, and a host of other things having to do with our sight and its preservation."—
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Around the World

International Association for Prevention of Blindness

During the colorful XVI International Congress of Ophthalmology in London this summer were held the meetings of the Executive Committee of the General Assembly of the International Association for Prevention of Blindness.

The agenda of the Scientific Session of the General Assembly of the Association, held July 19, 1950, centered around "Nomenclature and Classification of the Causes of Blindness." Detailed reports on this subject were given by Prof. Arnold Sorsby, representing the British Empire; Dr. Conrad Berens, Miss C. Edith Kerby, and Dr. Franklin M. Foote, representing the Western Hemisphere; and Prof. A. Toulant and Dr. Aimé-Marie Larmande of Algiers, representing France and the French Colonial Empire.

Reports were also given by Dr. S. Delthil of Paris on work with the partially seeing children in that city, and by Dr. K. Cunningham, on prevention of blindness in the Union of South Africa.

During the business meeting of the Assembly there was considerable discussion of the various methods of classification of causes of blindness proposed. It was finally unanimously voted to adopt the dual classification of causes of blindness as proposed by Dr. Berens. This is the classification

which has been used extensively throughout the United States, Canada, and in other parts of the Western Hemisphere; it had already been given tentative endorsement by the Pan-American Association of Ophthalmology.

Glaucoma Prize

The international prize of \$1000 for research in glaucoma was divided equally between Doctors L. and R. Weekers, of Liège, Belgium, and Dr. Jean Gallois, of Paris.

Because of the financial difficulties of the International Association it was voted to close the Secretariat at 66 Boulevard St. Michel, Paris, and to transfer the work of the Secretary to the offices of the President of the Association, Dr. P. Bailliar, at 47 Rue de Bellechasse, Paris. The present Executive Committee and officers were re-elected.

Exhibits

In addition to the excellent scientific sessions of the International Congress of Ophthalmology there were several extensive exhibits covering clinico-pathological and historical aspects of ophthalmology, lighting, and industrial and social ophthalmology. The United States National Society for the Prevention of Blindness furnished an exhibit on the Society's industrial activities with special emphasis on the Wise Owl Eye Safety Program.

Honorary Membership Bestowed

While in London, the Executive Director presented Sir Alexander Fleming with honorary membership in the National Society, as voted by the Board of Directors. This honor was accorded Sir Alexander because of the great contribution his discovery of penicillin has been in the treatment of eye disease and in the prevention of blindness.

WHO Meeting on School Health

Basic principles for provision of health care for school-age children were defined for the first time on a world-wide basis by a group of medical officers, pediatricians, school physicians, health educators and nurses called together by the World Health Organization in Geneva August 5-12, 1950. The expert committee on school health services emphasized the need for school services to be organized as "team projects" involving parents, the community, professional groups, social agencies and others interested in child welfare, and pointed out that school health services should be a direct continuation of preschool services. The United States was represented at the meeting by Myron E. Wegman, M.D., and Dorothy B. Nyswander, Ph.D.

Canada

The University of Toronto Faculty of Medicine announces the renewal of the Canadian National Institute for the Blind Fellowship in Ocular Genetics. The grant is \$2,000 for research in this field. The Fellowship was held during 1949-50 by L. A. Probert, M.D., of Moose Jaw, Saskatchewan, who has been carrying on studies of the hereditary aspects of glaucoma.

G. A. Thompson, M.D., of Richmond Hill, Ontario, has been appointed to continue these studies for the forthcoming year through funds provided by this Fellowship.

Great Britain

The Council of the Ophthalmological Society of the United Kingdom has instituted a prize of £100 awarded triennially, known as the Treacher Collins Prize Essay, for the best essay submitted. The Prize is open to qualified medical practitioners of any nationality, and the essay shall be written in the English language. The subject for the next award is "Exophthalmos in Relation to the Endocrine Disorder," and the closing date for sending the essay is September 20, 1951. No name should be on any essay, but a distinguishing pseudonym or quotation which should be upon a sealed envelope containing the candidate's name and address, should accompany the essay, which should be addressed to the Honorary Secretary, Ophthalmological Society of the United Kingdom, 45 Lincoln's Inn Fields, London, W.C. 2, from whom also further particulars may be obtained.

Iran

At the invitation of His Excellency, Hussein Ala, President of The Iran Foundation, Inc., and of Dr. A. Torab Mehra, Medical Director of the Foundation, R. Townley Paton, M.D., a member of the Board of Directors of the National Society, went to Iran this summer to study trachoma control in that country. Dr. Paton spent from July 23 through August 23 in Iran traveling extensively in the country and meeting with many

physicians in order to study the trachoma situation. He set up an experimental treatment program while there and outlined in detail educational and preventive services which should be carried on as part of the general public health program. Before leaving Iran, Dr. Paton had the privilege of an audience with His Imperial Majesty, Shah Mohammed Riza Pahlevi, to discuss the trachoma problem with him.

Mexico

Mexico City has been selected for the Fourth Pan-American Congress on Ophthalmology, which will meet January 6-12, 1952. Inquiries may be addressed to Luis Sanchez Bulnes, M.D., Secretary General, la. Gomez Farias, 16, Mexico 4, D.F.

South Africa

Reporting on its campaign to carry out ophthalmological surveys, the

South African National Council for the Blind—Bureau for the Prevention of Blindness points out that in all the Areas where ophthalmological surveys have already been carried out, the serious eye disease and potential blind cases exceeded the registered blind, but, from the onset, it was obvious that this was not the case in the Langa and Bokmakerie Areas: 3,052 cases, representing a cross-section of the colored and native population of these Areas, were examined, but special attention was given to school and preschool children. The incidence of blindness in Capetown, as reflected by the figures in the Blind Person's Register, compares favorably with the incidence in the whole of the Union. The European incidence in Capetown is approximately 0.95, colored 2.20 and natives 1.6 per thousand, compared with the incidence over the whole Union of 0.97 for Europeans, 2.3 for colored, and 3.67 for natives.

Note and Comment

1951 Conference Dates Set

The annual conference of the National Society for the Prevention of Blindness for the year 1951 will be held on March 28, 29, 30 at the Hotel New Yorker. Room reservations should be made directly with the hotel.

Course in Industrial Vision

The New York University Center for Safety Education, with the National Society as co-sponsor, is giving a course in industrial vision to begin September 27. Two-hour sessions will be held every Wednesday following for fifteen weeks. Among the topics which will be presented are "Eye Protection in Industrial Accident Prevention" and "Conducting the Industrial Visual Efficiency Program," by Robert S. Krueger, director of industrial service for the National Society, and "Principles of Vision" and "Visual Anomalies," by Willis S. Knighton, M.D.

The course will be held at the Center for Safety Education, 8 Fifth Avenue, New York City. For further information in reference to courses, applicants should write to the New York University Division of General Education, 8 Fifth Avenue, N. Y. 11, N. Y.

Indiana Becomes Eye-Conscious

The Indiana Department of Public Welfare devoted the June, 1950 issue

of *Public Welfare* to the subject of sight conservation. Articles include "Eyes for Tomorrow," by Maude R. Ward; "The Nationwide Battle Against Blindness," by Franklin M. Foote, M.D.; "Vision Screening in Sight Conservation," by Bernice M. Senour, R.N.; "Bringing the Sun Indoors," by Ross Brown; "Our Children's Sight Is Being Conserved," by Lula Wagner; "Sight Conservation as Practiced in Industry," by Carl R. Fox. In addition to these articles, the issue is spotted with a number of interesting case histories of sight conservation achievements.

Industrial Sight Conservation

The National Society's exhibit at the International Congress of Ophthalmology in London, July, 1950 outlined a six-point program for Industrial Sight Conservation which can be applied to the smallest as well as to the largest plant:

1. Testing for the five basic visual skills: Basic visual skills important to industry are (1) central visual acuity at near, far and work distance; (2) field of vision; (3) muscle balance; (4) depth perception; and (5) color discrimination. All employees should have tests for these skills, plus an examination to detect any evidence of eye disease. Such a program is best undertaken under professional supervision.

2. Analysis of jobs for visual factors: When the exact visual requirements of various jobs are known it is possible to place each employee where his eyesight skills can be used to best advantage. Job analysis should be a cooperative undertaking in which plant and eye physicians, engineers and supervisors make their various contributions as necessary.
3. Eye safety equipment with correction for the job: Through proper operating safeguards and personal protective equipment more than 95 per cent of jobs can be made non-hazardous to eyesight. The right type of protection for a particular exposure, careful fitting to individual requirements, and proper maintenance are essentials in the goggle program.
4. Emergency eye care: Prompt treatment for eye injuries should be available in accordance with recommendations of the plant medical director and consulting eye physician. Eye fountains or showers are essential where employees are exposed to chemical eye hazards in the form of splashing liquids, fumes, dust or vapors.
5. Proper use of illumination and color: For maximum efficiency and economy adequate illumination should be combined with light-colored walls and ceilings as well as with suitable contrasting colors on machinery and surrounding surfaces. Glare and sharp brightness contrasts should be avoided.
6. Group and individual education in eye health and safety: Effective aids in education are posters, films, special safety campaigns, and incentive programs such as the Wise

Owl Club of America which gives recognition to workers who have escaped serious accidental eye injury by wearing proper protection.

D. C. Society Publishes Directory

A list of the resources for eye care of the metropolitan area of Washington, D. C., Montgomery and Prince George's Counties, Md., and Alexandria, Arlington and Fairfax Counties, Va., has been compiled by the D. C. Society for the Prevention of Blindness. The list will be useful in directing people to the appropriate place in the community for preserving vision or adjusting to poor vision.

A.P.H.A. Meeting

The 78th Annual Meeting of the American Public Health Association and meetings of 32 related organizations in the field of public health and preventive medicine will be held in Kiel Auditorium, St. Louis, Missouri, October 30 to November 3.

More than 400 speakers and discussants will participate in the scientific programs under development by the thirteen Sections. The Sections are Dental Health, Engineering, Epidemiology, Food and Nutrition, Health Officers, Industrial Hygiene, Maternal and Child Health, Medical Care, Public Health Education, Public Health Nursing, School Health, and Statistics.

On November 2 the Maternal and Child Health and School Health Sections and the American School Health Association will hold a joint session to hear a symposium on vision testing research. The research was sponsored jointly by the U. S. Children's Bureau, the National Society, the Missouri State Division of Public Health, with

the cooperation of the St. Louis Board of Education and Washington University School of Medicine. Those participating in the symposium are Richard G. Scobee, M.D., Washington University School of Medicine; Marian M. Crane, M.D., U. S. Children's Bureau; Philip J. Hickey, Superintendent of Education, St. Louis; Lloyd L. Tate, M.D., St. Louis Board of Education; Franklin M. Foote, M.D. and Helen E. Weaver, R.N., of the National Society.

Apropos of Use of Animals for Medical Studies

Two communities recently reported by the National Society for Medical Research to be cooperating in making unwanted dogs and cats available to science for medical research are Buffalo, N. Y. and Wilmette, Ill. In Buffalo, the City Council voted 10 to 5 to override the mayor's veto of the bill which the Council members had previously passed. Beginning July 1, the unwanted animals will have been transferred to medical institutions in the city to study such health problems as cancer, heart disease, and blindness.

Other communities which have recently acted to save stray animals for use in medical research are Omaha, Cleveland, and Baltimore. The Los Angeles City Council is currently considering two proposals on this matter.

They Took the Words Right Out of Our Mouths

The following excerpt from *The Pleasures of Publishing*, published semimonthly by Columbia University Press, struck such a responsive chord among those staff members who fill

orders for publications that we wanted to share it with our readers.

"For a nation that prides itself on its efficiency, this country has certainly made a fool of itself with its mania for requiring the notarizing of dozens of copies of forms having to do with the purchase of anything from a three cent stamp on up. In our office, as in all business houses, there is a daily flow of forms of assorted sizes which must first be signed by some 'competent' employee and then notarized, stamped, sealed, and mailed. (Usually we have to supply the envelope too.) It is a completely meaningless process that proves absolutely nothing.

"The amounts involved may be, and often are, under one dollar. The number of copies which must be notarized beats anything the Army ever thought up in the way of paper work. Whenever we sell a book to the Philippines we have to notarize eight copies of the invoice, and our Pacific friends don't even supply the statement to be signed. We finally had our own rubber stamp made. In many cases we have to fill out extra forms in addition to our own invoices.

"The forms to be notarized are every conceivable shape and size, but they have one thing in common. They never allow enough space for all the names and titles that have to be signed. On top of this, we must have a notary affix his seal as well as sign. It looks very pretty, but what it proves we have yet to find out. Any child can manipulate a seal. When we sell a book to the Free Library Commission of Pierre, South Dakota, we have to affix this seal in three places. The sovereign state of Montana is boldly honest enough to print on its forms

that it 'does not pay notary fees.' But they want the fancy trimmings.

"The statements that have to be signed would give any official, employee, or notary the cold shivers if he took them seriously. When we sell to the city of Rochester, New York, we have to certify that no child labor was used on our books 'pursuant to Resolution 37-38 of the City of Rochester.' How we are expected to know—or why we should care—what resolution 37-38 says up in Rochester is beyond us. We have even had forms which we had to sign, swearing we had already received payment before we could get payment.

"If this utter nonsense were stopped, millions of hours a year would be saved in publishing houses, in libraries, and in governmental offices. (It should be said in fairness to the libraries that in most cases they have not made these rules.) At present, it appears that if we want to sell books, we must increase our costs by going through this tedious work, but we don't really see why we should carry those costs. If governments and other organizations think they can achieve efficiency and honesty by resolving to have more clerical work and greater numbers of pieces of papers, they ought at least to fill out the multitudinous forms and pay us a service charge for signing, swearing, sealing, and otherwise wasting our time."

Alabama Sight Conservation Program

The 1950 annual report of the Alabama Sight Conservation Association, Inc., indicates continuous progress. The Association was responsible for 303 hospital admissions, totaling 1,977 patient days in the hospital. In

addition, the Birmingham eye clinic serviced 1,127 outpatient visits. Four hundred and fifty-one doctor's appointments were provided during the year. The total cases registered amounted to 2,627, of which 547 were new patients.

The annual budget amounted to \$27,928.08, of which \$19,215.48 was the net sum realized on the East-West Baseball Game which was played as a benefit for the Association. The remainder of the budget was made up of memberships as well as Lions Clubs' and individual contributions.

New Use for Television

An editorial in the May, 1950 *Eye, Ear, Nose and Throat Monthly* points out that "from the standpoint of therapy, television affords an excellent opportunity for the training of an amblyopic eye, since the child will readily consent to wear an occluder before the good eye in exchange for the privilege of being permitted to watch television."

Locals Affiliate with National Society

Three local prevention of blindness groups have affiliated with the National Society with a view toward establishing increased cooperation between national and local prevention organizations. The agencies are the Detroit Society for the Prevention of Blindness; the Pittsburgh Branch of the Pennsylvania Association for the Blind; and the District of Columbia Society for the Prevention of Blindness.

Five new officers were elected to posts with the National Society. Two new vice-presidents are Professor Ira V. Hiscock, chairman of the Depart-

ment of Public Health at Yale University, New Haven, Conn.; and Dr. William L. Benedict, of the Mayo Clinic, Rochester, Minn.; and new members of the Executive Committee are Mr. Lawrence B. Elliman, Jr., vice-president of the Pease and Elliman real estate company, New York; Mr. Carleton H. Palmer, chairman of the Board of E. R. Squibb and Sons, New York; and Mr. William Ziegler, Jr., president of the American Foundation for the Blind.

Qualifications for Executives

So many questions have been asked as to what qualifications prevention of blindness executives should have that it seems worth quoting the statement published in a recent issue of the Metropolitan Life Insurance Company's *Health Bulletin for Teachers*.

Under the professions of executives of voluntary health agencies, the educational requirements are listed as follows: "a bachelor's degree with a major in the social sciences (such as political economy or sociology) or in the natural sciences (such as biology or bacteriology) and with training in English composition and speaking; followed by graduate work leading to the degree of Master of Public Health or its equivalent and some years of experience in voluntary health or welfare agencies."

The typical positions held are as follows: "executive director of one of the more than 20,000 voluntary health or welfare agencies in the United States (for example, Red Cross chapters and branches; crippled children's societies; visiting nurse associations; community health or welfare councils; and local units of national health associations, such as those of the National

Tuberculosis Association, the American Cancer Society, and the National Foundation for Infantile Paralysis)."

Research Grants Awarded

The National Society has awarded research grants to Eugene M. Blake, M.D., of the Department of Ophthalmology, Yale University School of Medicine, New Haven, Connecticut, and to Willis S. Knighton, M.D., and John H. Dunnington, M.D., Institute of Ophthalmology at Presbyterian Hospital, New York, N. Y. Dr. Blake is making a study of the effectiveness of the new drug ACTH in treating glaucoma. Drs. Knighton's and Dunnington's study is concerned with the relationship of nutrition to glaucoma.

Library Lighting

The Illuminating Engineering Society has recently published the first official study on lighting or seeing tests in libraries under the title "Recommended Practice of Library Lighting." Single copies may be purchased for fifty cents from the Illuminating Engineering Society, 51 Madison Avenue, New York 10, N. Y.

Ophthalmologist Wanted for U.S.P.H.S. Program

The United States Public Health Service is conducting a nationwide program on the control of chronic diseases. The conservation of vision is an integral part of this program. To this end, the Public Health Service has created the position of Chief of the Sight Conservation Program. The man selected will have the responsibility of developing a new type of public health program and will have

available the help and experience of men who have developed similar programs in other fields. The appointee should be a certified ophthalmologist and will be appointed on a full-time basis, either as a regular or a reserve commissioned officer in the United States Public Health Service. The

grade and remuneration depend on the age of the appointee, the salary varying from \$5,686 to \$9,984 per annum.

Any interested ophthalmologist should communicate directly with Dr. A. L. Chapman, United States Public Health Service, Federal Security Agency, Washington 25, D. C.

1000th Wise Owl Honored



Clayre Pomeroy (right), a machinist at the Phoenix, Arizona, plant of the Reynolds Metals Company, receives a special certificate from Secretary of Labor Maurice J. Tobin at a ceremony in the Secretary's office, in Washington, D. C., on September 6. At the ceremony, Mr. Pomeroy was enrolled as the 1000th member of the Wise Owl Club of America—the eye-safety organization sponsored by the National Society for the Prevention of Blindness. To qualify as a Wise Owl, an industrial worker must prove that his safety glasses saved him from partial or complete blindness. Watching the presentation are Dr. Franklin M. Foote (left), executive director of the National Society, and Keene Johnson, vice president and director of public relations for Reynolds Metals Company.

Current Articles of Interest

Illumination—Industry and the Workman, Major Y. K. C. Pandit, *Proceedings of the Society for the Study of Industrial Medicine*, June, 1950, Vol. II, No. 2, pp. 80-86.

Rapid progress is being made in India toward "better light for better sight," though much remains to be done before planned illumination becomes a reality in all industries. The author considers problems of surroundings, color and contrast, glare and artificial lighting. Citing the research work of illuminating engineers abroad, he stresses the evidence that improved lighting enables the eyes to function better, increases production and results in less waste and fewer accidents. Planned illumination must include consideration of such factors as nature of the visual task, size and detail of work, distance of the work from the eyes and the periods for which visual concentration is necessary.

The Peoria Visual Screening Project, Clifton S. Turner, M.D., and J. A. Potter, O.D., *Illinois Medical Journal*, March, 1950, Vol. 97, No. 3.

The Peoria Visual Screening Project was initiated in 1948 for the purpose of finding the school children with visual difficulties and to determine what could be done about them. Using the Massachusetts Vision Test, a total of 12,667 grade school students were screened. Results showed 2,226, or approximately 18 per cent, below minimum standard (53 per cent were boys

and 47 per cent were girls). Figures presented show a gradual increase from 25 per cent in the first grade to 53 per cent in the eighth grade, indicating that visual problems increase as the child advances in school. Of those below minimum standard, approximately 21 per cent obtained professional care. Commenting on the merits of the program, the authors stress the importance of a small advisory committee representing both ophthalmologists and professional optometrists. The chief weakness in the program is the need for follow-up of unresponsive parents and urging them to obtain the indicated visual care. The authors believe that this part of the program would be strengthened by assigning follow-up work to public health nurses, who have already demonstrated their effectiveness in such procedures.

The Health Division Takes Over Eye Safety, J. R. Rule, *National Safety News*, August, 1950, Vol. 62, No. 2, p. 26.

Safety glasses have been the major item of the eye safety program of the health division of the Oak Ridge National Laboratory. Since the program was taken over by the health division from the safety department in 1948, each pair of prescription glasses must be examined by the ophthalmic dispenser and fitted carefully to the wearer. Maintenance and service are available at all times. The professional atmosphere provided is believed to be

one of the factors contributing to the favorable attitude of employees toward the program. When an employee makes a complaint the ophthalmic dispenser checks the spectacles for alignment, fitting and comfort. If the fault is not with these, he makes a test of the employee's performance of 12 visual skills which will indicate whether or not a complete eye examination is needed. If so, the employee is referred to his ophthalmologist. Through co-operation of the physician and ophthalmic dispenser visual complaints are attended to promptly.

Industrial Eye Programs in Hawaii, W. J. Holmes, *Industrial Medicine and Surgery*, August, 1950, Vol. 19, No. 8, pp. 374-375.

The sugar and pineapple industries in Hawaii have kept abreast of industry on the mainland in providing an eye-corrective-eye-protective program. Two devices are largely responsible for recent active participation of industry in eye programs: hardened lenses which may be specially ground to fit an individual's prescription; and a screening device which makes it possible to screen individuals rapidly as to visual acuity, muscle balance, depth and color perception, uni or binocular vision at a distance (roughly 20 feet) and at near (14 inches). To date, approximately 40,000 employees have been screened. Results show that many eye defects are correctible, undetected eye diseases may be discovered, and that increased production and efficiency follow alleviation of eyestrain and poor vision. The author points out a number of misconceptions about eye safety programs that must be avoided, and makes some recommendations for the partial solution of the problems fac-

ing industrial ophthalmology. Among the latter are: place the eye program under the direct supervision of the medical department; continue to screen distance and near vision of all employees; repeat screening once a year or every two years; and provide protective goggles for all personnel who may be exposed to eye hazards.

The Eye in Diseases of the Nervous System, E. L. Goar, *New Orleans Medical and Surgical Journal*, June, 1950, Vol. 102, No. 12, pp. 609-613.

The eye is an important organ in the diagnosis of diseases of the nervous system, as well as an aid in the diagnosis of many general diseases. Among the diseases that the ophthalmologist may detect during his eye examinations are brain tumor, multiple sclerosis, cerebrospinal syphilis, myasthenia gravis, neuromyelitis optica, and encephalitis. The ophthalmologist may assist the neurologist especially in cases involving brain tumor, multiple sclerosis, ocular palsies, the phakomatoses, and exophthalmos.

Modern Management of Ocular Infections, J. G. Bellows, *American Journal of Ophthalmology*, June, 1950, Vol. 33, No. 6, pp. 909-914.

The author points out that the two principles of ocular chemotherapy are that organisms causing the infection must be sensitive to the chemotherapeutic agent, and that an effective concentration of the chemotherapeutic agent must reach the site of the infection and come in contact with the organism. The agents which have already proved their value in ophthalmology or show great promise are sulfonamides, penicillin, streptomycin, bacitracin, aureomycin and chloram-

phenicol. A general guide is provided for the clinical management of ocular infections and the importance of accurate bacteriologic diagnosis is stressed as a preliminary to proper therapy except in acute infections, when therapy should be started immediately. Therapy should be flexible so that treatment can be altered if laboratory findings or the course of the infection so indicate.

Recent Advances in the Physiology of Vision—Part III, H. Hartridge, *British Medical Journal*, Saturday, June 10, 1950, No. 4666, pp. 1331-1340.

Parts I and II were published in 1946 and 1947. Part III comprises 15 sections, each dealing with a separate aspect of the physiology of vision, such as human color perception, color-blindness and the theories of vision, vitamin A and some of its colored derivatives, eye movements and methods of recording them, some effects of polarized light on vision, and stimulation of the retina by electricity and magnetism. The section on refractive errors and their causes contains five theories concerning the origin of refractive errors of the eye. The fifth of these is that heredity is important in determining the adult condition of the eye, which, if true, raises the question regarding the way heredity acts. For example, it is known that tallness and shortness are inherited characteristics. Does this apply to errors of refraction? Height is controlled by a specific hormone of the anterior pituitary. Does a special hormone from this gland control the growth of parts of the eye? Can refraction be influenced by application of certain hormones? The author expresses the belief that since

x-ray methods have provided means of measuring both the eyeball size and focal length of the lens system in the living human eye, answers to these questions should not be difficult to obtain.

Effects of Nitrogen Mustard on the Intraocular Pressure, H. Davson and A. Huber, *British Medical Journal*, April 22, 1950, No. 4659, pp. 939-940.

When three drops of nitrogen mustard were placed in the conjunctival sac of a rabbit's eye, the intraocular pressure rose from its original value of 16 mm. Hg. to one of 55 mm. Hg. within about 25 minutes. The changes in intraocular pressure are similar to those occurring in an acute inflammatory attack of glaucoma. The authors plan to publish details later, their present purpose being to emphasize that nitrogen mustard is a dangerous substance and that the human eye is believed to be some five times more sensitive to its effects than the rabbit's eye. There is no known antidote, so that the first measure to be taken is thorough and immediate irrigation of the eye with water or saline solution.

Effect of Dibenamine® in Chronic Simple Glaucoma, S. Bloomfield and H. Haimovici, *Archives of Ophthalmology*, June, 1950, Vol. 43, No. 6, pp. 969-978.

Pointing out that although the number of patients treated was small, the effects were so constant that certain conclusions could be drawn, the authors provide the following summary of their investigation into the effects of dibenamine® (a nitrogen mustard derivative) on eyes with chronic simple glaucoma:

"Dibenamine® administered intra-

venously reduced the tension in each of 18 eyes with chronic simple glaucoma, many of which had not responded satisfactorily to cholinergic drugs.

"This hypotensive effect was generally maximal within six hours after administration of the drug and then gradually disappeared in all but 1 eye within twenty to forty-eight hours.

"The necessity for the administration of dibenamine® by slow intravenous drip and its pronounced systemic effects greatly limit the usefulness of the drug in the routine treatment of chronic simple glaucoma.

"The hypotensive action of dibenamine® in eyes with chronic simple glaucoma indicates the potential therapeutic value of a newly developed group of effective sympatholytic drugs and may throw further light on the rôle of the autonomic nervous system in the pathogenesis of that disease."

Penicillin-Silver Nitrate Prophylaxis Against Gonorrheal Ophthalmia of the Newborn, Preliminary Report on Use of Penicillin and Silver Nitrate Combined and of Silver Nitrate Alone, S. G. Watts and M. M. Gleich, *The Journal of the American Medical Association*, June 17, 1950, Vol. 143, No. 7, pp. 635-637.

The following summary is provided of a study of 4,565 newborn infants who received combined penicillin-silver nitrate prophylaxis:

"The incidence of gonorrheal ophthalmia in newborn infants at Harlem Hospital was appreciable before the use of combined oral administration of sulfathiazole and local instillation of silver nitrate prophylaxis. With the institution of this combined chemo-

therapeutic prophylaxis, the incidence of gonococcic conjunctivitis was reduced considerably. After the discontinuance of this routine method of prophylaxis the incidence of gonorrheal infection in the eyes of newborn infants again became comparable to that in previous years. A study carried out for a period of one year (June 1, 1948 to June 1, 1949) demonstrated again the prophylactic value of combined chemotherapeutic agents (penicillin and silver nitrate) against neonatal gonococcic conjunctivitis. As a result of this investigation it is suggested that the combined intramuscular-local method of prophylaxis be continued until sufficient data are available for a more adequate evaluation."

Use of Sodium Propionate in External Infections of the Eyes, F. H. Theodore, *The Journal of the American Medical Association*, May 20, 1950, Vol. 143, No. 3, pp. 226-228.

Sodium propionate, a fatty acid derivative, was used clinically in about 1,200 cases of conjunctivitis, blepharitis and keratitis. The author states that it proved to be efficacious and nonirritating and advocates it as a supplement to or substitute for other therapeutic agents now in general use. He especially recommends to physicians engaged in industrial practice the routine use of sodium propionate after the removal of corneal foreign bodies, as a prophylaxis for corneal ulcer. Among the advantages of the drug are that it is virtually nontoxic and does not result in allergies or sensitivities; and that it is effective against all the bacteria causing common ocular infections and against fungi.

Corneal Transplantation in the North General Hospital, J. V. Tamesis, *The Journal of the Philippine Medical Association*, April, 1950, Vol. XXVI, No. 4, pp. 145-153.

Two cases of corneal transplantation performed by the author are reported. In 1949 the author had assisted at the first operation of this kind, which became a milestone in ocular surgery in the Philippines. One of the biggest problems encountered is the lack of donor material. This stems from the layman's aversion to the removal of an eye either from the living or the dead, a prejudice resulting from his religious beliefs, customs, superstitions and traditions. In these two cases it was necessary to use eyes which had been enucleated because of pain in absolute glaucoma. All indications at the time of reporting are that the grafts appear to have taken well. The author believes that, should the final outcome of such transplants be favorable in these cases, it will have been demonstrated that otherwise useless corneas of absolute glaucomatous eyes can be used as donor material.

The Blind Baby, A. De Roeth, Sr., *Northwest Medicine*, June, 1950, Vol. 49, No. 6, pp. 380-382.

The blind baby is an important social problem as well as a tragedy for the child and family. Available statistics on 3,689 pupils in schools for the blind in the United States during 1945-1946 show a prenatal origin of blindness or defective vision in 1,892, or 51 per cent, of all pupils. It occurred during birth or up to, but not including, one year in 654, or another 18 per cent. These figures show that the majority of pupils in schools for the blind are born blind or become blind

in the first year. The author discusses the diseases producing this blindness, the pattern that should be followed in the eye examination of a baby, prophylaxis, and therapy. Although most of congenital malformations cannot be cured, cataract, the most common cause of congenital blindness, can be helped by surgery. Congenital cataract due to rubella in the mother can be prevented if precautions are taken to keep the mother from being exposed to rubella during pregnancy. Retro-lental fibroplasia, which occurs in some premature infants, is not a congenital disease but develops when the baby is three or four months old. It cannot be cured but may possibly be prevented by the administration of vitamin E to the premature.

Ocular Manifestations of Sarcoidosis, J. A. Van Heuven, *American Practitioner and Digest of Treatment*, June, 1950, Vol. 1, No. 6, pp. 619-623.

A great variety of symptoms of sarcoidosis are reviewed. This is a chronic infectious disease of unknown etiology, characterized by granulomatous lesions somewhat resembling true tubercles, affecting various organs of the body. The literature reveals that eye affections appear in 5 to 10 per cent of all cases. The most frequent manifestation of the disease in ophthalmology is the affection of the uveal tract. The iritis in sarcoidosis shows pericorneal injection; small nodules; exudates in the anterior chamber; and opacities in the vitreous. Ophthalmologists encounter many cases of inflammations of the uvea which they cannot classify; the more prepared they are to discover sarcoidosis in these cases, the more they will find. The physician has good reason to be suspicious of sar-

coidosis, if the uveitis is accompanied by one or more of the following symptoms: swelling of lymph nodes and/or parotid glands, enlargement of the liver and spleen, cutaneous lesions, changes in radiograms of lungs and bones, negative tuberculin reactions, and an almost total absence of general complaints.

The Causes of Blindness in England and Wales, A. Sorsby, *Medical Research Council Memorandum No. 24*, His Majesty's Stationery Office, London, 1950.

The author has made an over-all survey based on 19,149 certificates of blindness, giving a fair sample for the country as a whole of the causes seen in the blind registered between 1933 and 1943. His estimate of the rate of blindness for England and Wales is about 200 per 100,000. The incidence of blindness in children aged 5-15 years has declined to about half in the period from 1923 to 1948. As to causes of blindness today: 25,000 are blind from glaucoma, malignant myopia and congenital anomalies; 20,000 are blinded by cataract; and 10,000 are blind from infectious diseases. No reduction in incidence in the first group is expected in the immediate future. The second group could be reduced by at least a third, if existing methods of treatment were fully utilized. The author believes that in the near future the figure in the third group, much like that for blindness from smallpox, may become past history. In closing, he indicates that elimination of blindness demands not only more administrative effort and more hospital facilities but also the creation of new knowledge. Before really constructive action can be taken, there must be

better understanding of the congenital and hereditary anomalies, myopia, inflammatory diseases, glaucoma, cataract, and the senile degenerative processes.

Ophthalmological Investigations of 500 Persons with Hypertension of Long Duration, P. Bechgaard, K. Porsaa and H. Vogelius, *The British Journal of Ophthalmology*, July, 1950, Vol. XXXIV, No. 7, pp. 409-424.

Ophthalmological and medical examinations were made of 485 hypertensive persons 4 to 11 years after the hypertension (high blood pressure) had been detected. Retinal vessels were normal in 160—the most severe retinal changes were scarcely seen. The arterial diameters were normal in 50 per cent, narrow in 34 per cent and irregular in 27 per cent. Arterio-venous crossings were normal in 63 per cent; the vein was depressed in the remaining 37 per cent. The course of the arteries was "normal" in 72 per cent, the arterial reflex normal in 54 per cent. "Quite normal fundi were often found after many years' severe hypertension in persons who were severely affected by their hypertension, and who had signs of myocardial damage, while there were definite changes in the retinal vessels in many cases with no symptoms and a normal electrocardiogram."

Chinese Eyesight and Spectacles, O. D. Rasmussen, Tonbridge, England, 1950.

The author writes from researches begun in 1908 in China and continued over a period of 25 years. At a recent estimate 2,000,000 Chinese are totally blind; 3,000,000 more are blind in one eye. This is due largely to famine,

disease, ignorance, and above all, malnutrition—especially absence of vitamin A in their foods. Regarding the eyesight of the Chinese, the records indicate that they are a highly myopic nation (75 per cent of all spectacles worn are for nearsightedness); that keratomalacia (caused by vitamin A deficiency) is the major cause of ocular disease; and that presbyopia occurs about five years earlier among the Chinese than among Western peoples. Before Western influence was felt, it was widely believed in China that there were only three eye troubles: short-sight, old-sight (what we need glasses for as we grow old), and disease—from trachoma to pinkeye. Thus, nobody but an old man could require old-sight lenses. A young man needing long-sight lenses (convex, resembling old-sight glasses) would refuse to wear them for fear of being disrespectful to his father or grandfather.

Studies of the Visual and Lighting Problems of Television in the Home, E. W. Commerly, *Illuminating Engineering*, July, 1950, Vol. XLV, No. 7, pp. 433-443.

Shall television be viewed in the dark, in a dimly lighted room, or in a normally lighted room? To clarify this question the author points out the influence of the theater and motion pictures on television in the home. People are prone to think that the television program is like the theater, "demanding" a dark house at night even though the same television receiver was viewed over long periods in the same room in the earlier daylight hours. Visual discomfort in viewing motion pictures is avoided by large picture size and low screen brightness even though the audience lighting is at

low levels. Thus, a mental conditioning developed in the theater is carried over to television in the home, although the two are not alike. To visualize the discomfort-producing qualities of television, the author suggests viewing the picture for five to ten minutes in an unlighted room. Follow this by gradually increasing the background brightness against which the picture is viewed. With bright parts of the background brought up to background brightness of the tube, the comfort and general viewing sensations are reasonably satisfactory. Illustrations of background lighting and general room lighting are included in the article to show the basic principles of good visual conditions.

Daylight in Classrooms, R. L. Biese, Jr., *Illuminating Engineering*, July, 1950, Vol. XLV, No. 7, pp. 445-456.

A special test building was constructed for the purpose of studying factors affecting brightness patterns and visual environments in daylighted classrooms. The author discusses material taken from this study which will assist in effective design for daylight in schools: fenestration; window treatments for non-sun exposures; window treatment for sun exposures; decoration; desks; desk arrangement; illumination studies; sky brightness; illumination data; and brightness ratios. He concludes that the intelligent use of building materials commercially available, such as steel windows, clear, diffusing and heat absorbing glasses, translucent shades and light-reflecting Venetian blinds can produce visual environments which fully meet all the recommendations of the *American Standard Practice for School Lighting*.

Why 30 Footcandles Minimum for Schoolrooms? C. L. Crouch, *Illuminating Engineering*, June, 1950, Vol. XLV, No. 6, pp. 343-347.

Approaches to the problem of determining illumination for visual tasks may be divided into two groups: *efficacy*, having to do with the ability of the eye to see better with increased illumination; and *efficiency*, having to do with the energy input to produce the visual output. The approaches considered under efficacy are characteristics of the task; speed of performance; and relative visibility or difficulty. The author describes and compares these approaches as used by various investigators in recommending illumination levels and finds that they approximate the recommendations made in *American Standard Practice for School Lighting*.

Industrial Hygiene Survey, Coal Mining Industry, State of Washington, I. H. Bulletin No. 4, A Report to the Industry by Industrial Hygiene Section, State of Washington Department of Health, 1950.

The sections of particular interest to us are those on personal protective equipment and illumination. It was found that comparatively few men wear goggles because coal dust accumulates on them and they become too hot or uncomfortable or fogged. By the nature of the work men are exposed to flying particles. The use of a plastic eye shield attached to the hard hat has won favorable response from some of the men. No illumination standards exist for coal mining even though many visual tasks in mines are regarded as being as critical as certain seeing tasks in other industries. The

permissible electric cap lamp provides "spot" illumination, but this does not provide good distribution of light. The recommended maximum brightness ratios between spot illumination and general illumination are of 5 to 1 and 10 to 1. High contrasts in brightness such as now prevail in mining cause fatigue, which, in turn, contributes to accidents. The development of practical, safe and adequate lighting for coal mining will require research and study, but will result in a reduced accident-frequency rate and greater productivity.

The Experimental Use of Cortisone in Inflammatory Eye Disease, E. H. Steffensen, J. A. Olson, R. R. Margulis, R. W. Smith and E. L. Whitney, *American Journal of Ophthalmology*, July, 1950, Vol. 33, No. 7, pp. 1033-1040.

This report follows one by the same authors on the effect of ACTH on inflammatory eye diseases. ACTH produced results which equalled or exceeded those obtained with present-day methods of therapy. The current study has shown that cortisone appears to be as effective as ACTH in the treatment of certain inflammatory eye diseases. Case reports are presented on seven patients with inflammatory eye disease treated experimentally with cortisone acetate. The authors' observations lend support to the concept that cortisone, and possibly other steroids with similar physiologic activity, are of importance in the response of organisms to inflammatory processes. Further investigation is necessary before drawing any final conclusion about results of treatment with cortisone.

Book Reviews

PHYSIOLOGY OF THE EYE. Vol. I. Optics. Arthur Linksz, M.D., F.A.C.S. With a foreword by Walter B. Lancaster, M.D., New York: Grune and Stratton, 1950, 334 p., 137 figs.

Dr. Linksz has planned a series of three volumes, of which this is the first. The other two are on Physiology of Vision and the Biochemistry of the Eye. The foreword to Volume I is written by Dr. Lancaster, who outlines the requisites of a good book as being accuracy, clarity, interest, plus the fact that it should not be too condensed, and that the illustrations (drawings) should make the text clear at a glance. Volume I admirably fulfills these requirements.

The author has become recognized in recent years as one of the outstanding teachers of visual physiology. He owes this recognition to his ability in presenting a point of view, a general survey, rather than a mass of unrelated facts.

The book is planned as a simple introduction. The style is clear and interesting and the illustrations are unusually well presented. They are as instructive and important as the text. Nearly all of them were newly conceived and drawn. Their legends are complete enough to allow study of the illustrations without constant reference to the text.

The material is carefully planned to introduce the beginner interested in the visual sciences to the profound wealth of information available in the great classics of Helmholtz, Gull-

strand, Tscherning, Duke-Elder and Stenstrom. Part I discusses the physics of light, mentioning the corpuscular theory, the wave theory, the ether-wave fronts, the velocity of light. The following topics are also handled: critical angle, reflection, refraction, interference, polarization, the electromagnetic theory, photoelectric effect, heat, line spectra, atomic structure, color temperature, photometry—the “candle” and the “lumen”—illumination and brightness.

Geometric optics is the concern of Part II—mirrors (plane and curved), refraction by single spherical surfaces and by cylindrical and prismatic lenses; the aberrations and what can be done about them. So often writings on geometric optics are so dull and incomprehensible that it almost requires a born mathematician or physicist to appreciate them. Linksz' text is clear and his diagrams are so well done that they too help overcome this difficulty. The dryness of this subject is relieved by the conversational style of the author—actually it is more like listening to a lecture than like reading.

Part III discusses the eye as an image-forming mechanism analysis of consecutive refracting interfaces, principal focus of the eye, the schematic eye, retinal images, accommodation, axial myopia and its correction, axial hyperopia and its correction, image size, etc.

Dr. Linksz' book will go a long way toward lifting the fog which has created a haze, for many individuals,

around the subject of optics. It is a necessary and a much-needed contribution to ophthalmic science.

ROBERT E. BANNON, *New York, N.Y.*

OPHTHALMIC MEDICINE. James Hamilton Doggart, M.D., F.R.C.S. Philadelphia: The Blakiston Company, 1949, 329 p., 28 colored plates and 87 text illustrations.

The main object of this book is to present those phases of ophthalmology in which the disease of the eye is a part of some general bodily disturbance. It is, therefore, ostensibly medical ophthalmology and is patterned after the well-known *Medical Ophthalmology* of R. Foster Moore, which is now out of print.

The book contains a great deal of information based on the author's wide experience, which is valuable for ophthalmologists. It cannot be recommended as a textbook of ophthalmology for the medical student as it attempts to cover too wide a field and in doing so spreads some of the material rather thin. Certain sections of the book, such as that on diabetes, are extremely well done. The short chapter on allergy might be omitted as not representing current thought, at least in this country.

FRANCIS H. ADLER, M.D., *Philadelphia, Pa.*

SIGHT, LIGHT AND EFFICIENCY. H. C. Weston. London: H. K. Lewis & Co. Ltd., 1949, 324 p., ill.

This book represents a correlation of medical and engineering views of the relationship between light and vision. The author is director of the Group for Research in Occupational Optics and secretary of the Vision Committee of the Medical Research

Council, London and a past-president of the British Illuminating Engineering Society. He writes in a style understandable to the layman, yet not too elementary to be uninteresting to professional or technical readers. The book is highly recommended to all concerned with vision, from the oculist to educators and industrial safety and personnel officers. It is exceptionally well illustrated with photographs and both black-and-white and colored diagrams. Topics include the structure of the eye and how it works, causes of eye trouble, occupational demands upon sight and methods of evaluating them, correction of eye defects, magnifying devices for use in industry, lighting and visual efficiency, color, vision tests, and industrial sight safety.

C. L. CROUCH, *New York, N. Y.*

HISTOLOGY AND HISTOPATHOLOGY OF THE EYE AND ITS ADNEXA. I. G. Sommers, M.D. New York: Grune & Stratton, 1949, 764 p.

As stated by the author in the preface, this book is an elaboration of his instruction courses. Every teacher worthy of the name sooner or later develops an individual system or method of teaching, colored by his personal experiences. It is right that he should express this in a formal and permanent way.

Frequently the problem resolves itself into one of commission versus omission. To condense a complex and vast subject as this one into a single volume of seven-hundred-odd pages is an achievement in itself.

However, if this work is meant for the beginner one cannot agree entirely with the style of presentation. Even at first glance such a reader may be dis-

couraged by the lack of condensed descriptions, classifications and accented headings. Another weakness is the paucity of illustrations. One must understand one's audience.

On the other hand, the mature student who is adverse to "spoon-feeding" will find much in this volume to interest him. The bibliography is excellent. The short condensations of the source material, in the writer's opinion, are novel and of inestimable value.

The subject material is divided into three parts: the first deals with the normal ocular histology, embryology and senescence; the second, with the relationship of general pathology to that of the eye; the third, with the histopathology of the specific ocular tissues.

MILTON L. BERLINER, M.D., *New York, N. Y.*

VISION—ITS DEVELOPMENT IN INFANT AND CHILD. Arnold Gesell, M.D., Frances L. Ilg, M.D., and Glenna E. Bullis. New York: Paul B. Hoeber, Inc., 1950, 329 p., ill.

In this new book the authors make a real contribution by pointing out that the sense of vision is integrated with the total action system of the child—his posture, manual skills and motor attitudes, intelligence, and personality. It is unfortunate that the research part of the work concerned with the retinoscopic study of visual reactions was not conducted in cooperation with the Department of Ophthalmology of the Yale School of Medicine, some of whose research funds were used in financing the study. Ophthalmologists and optometrists have questioned the significance of some of the reports of these retino-

scopic findings upon which some of the conclusions of the study are based. However, the authors do a service for pediatricians and others interested in eye care by pointing out so clearly how different the sense of vision is in the developing child from that in an adult. There is an interesting discussion of the behavior development of one child, blind at birth, up to the age of four years.

COMMUNITY HEALTH ORGANIZATION. Ira V. Hiscock, M.P.H., Sc.D., Chairman, Department of Public Health, Yale University. New York: The Commonwealth Fund, 1950, Fourth Edition, 278 p.

Professor Hiscock has completely revised this work so that it provides a useful summary of what is needed in the average community for public health service, in the light of programs already tested by city health departments. Although prevention of blindness workers at first glance may be disappointed in the brief allusions to their special field, it is of interest to note on page 124 that preliminary testing of vision of school children by the teacher or nurse is recommended and that, on page 246, conservation of sight is listed as one of the health problems that should be included in a public health survey. There are excellent discussions of the planning and organization of community health work and of interrelationships between all organizations in a community interested in health. The usefulness of community health councils in coordinating related health projects is emphasized. The volume is in accord with the usual high standards of the Commonwealth Fund with regard to format and typography.